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SUPPLEMENTARY ILLUSTRATIONS.

ALDERMASTON COURT, BERKSHIRE (December 4).

*APPLES BEAUTY OF STOKE AND GASCOYNE'S SCARLET (December 25).

HATFIELD HOUSE, HERTFORDSHIRE (October 23).

*ROCK GARDEN AT A CHELSEA SHOW (July 10).

ROSES: AMERICAN PILLAR, BLUSH RAMBLER, MRS. F. W. FLIGHT (July 24).

TRADE CARD, AN EIGHTEENTH CENTURY (November 20).

* Coloured Plates.

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MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

XVII.—THE LAST ASCENT OF THUNDERCROWN.

OF our journey back over the ranges there is little to tell. The Alpine winter, pitiless and penetrating, was breathing its raw breath across the fells, preparatory to its final descent in a mantle of white. On the way the chief things we harvested were *Pinus Armandii*, in huge sticky green cones, covering one with a fluff of snow as one snapped them off, and a really beautiful *Euonymus*. As a rule I dislike *Euonymus*; they suggest to me the Marine Parade. But there are two lovely species on the Border. This is the first one: always sporadic, it is not uncommon on the fringes of the lower Alpine copse, where it occurs in its most unbecoming form as a bush, rather gawky, and leafy, rank and leggy, with no adequate display of its fruits. It is far more to be desired as a small round-headed tree of some 15 to 18 feet, very often with weeping branches, and always so densely set with clusters of waxy, coral-pink fruit-husks (containing vermilion seeds) that its effect is that of some rather dim Japanese Cherry in full blossom. Yet more exquisite, however, is the other species; and much rarer, too—an occasional inmate of hedge, copse, or deep woodland all up the Border, making an extremely frail and spindly drawn-up bush or dainty tree of finest upstanding sprays, set rarely with very narrow-pointed, serrate leaves. From these sprays depend on long, delicate stems, solitary big fruits, which open into five-pointed stars of richest crimson, with a scarlet seed at the tip of each ray. (There is an inferior, larger, but very handsome four-pointed species; and yet another with black seeds to the scarlet stars.) Its effect when well fruited is of inimitable grace and brilliance, and the crimson

husks hang on in undiminished splendour long after the seeds are fallen.

So we came at last towards our little sunny town. In the deep gorge a singularly pretty small *Allium* was now in bloom on all the cool and shady ledges of the cliff—a grassy thing, with stems of 3 or 4 inches, and scanty, radiant heads of distinct and well-built stars of soft pink. Yet lower down, again, and all the most caked and arid slopes about the Black Water were dotted with globes and domes of solid gold. They spring from a tight little Tansy (as I believe it), forming woody roots and trunks that carry globular masses of minute and finely-divided aromatic foliage of silver whiteness, sufficiently delightful in itself, but nothing short of ravishing when late October and November covers each mound with a close and solid sheet of rayless, golden-yellow fluffets that from half a mile and more away spot the hard, bare hillside with conspicuous small footballs of bright colour. This is the last farewell of the year; already, as we rode towards the town, we saw that Thundercrown was clad in white, and though the snow visibly melted as we went, it was evident that winter was hard upon the Alps even here, and I trembled for the seed of my *Delphinium*. No sooner had we arrived, however, than news met us that drove even *Delphinium* from our minds. Two more foreigners had landed up in that remote and tiny little corner of China, also bent on collecting plants! The news smote us amidst ships and left us breathless. At last, however, we discovered that this was Mr. Mayer and his assistant, examining into fruits and grains and agricultural matters generally, on behalf of the Agricultural Department of the U.S.A. With these, then, we forgathered gleefully and ungrudgingly, and were lucky in being able to help them out of one of the difficulties to which travellers are liable in China. For Mr. Mayer had been ill-advised enough to bring with him up-country a very expensive fine gentleman of an "interpreter" from the coast, of lily hands, and liver to match. This dignitary (who was considered in the town the Grand Seigneur of the party) once arrived at so remote and barbarous end of the world as this, flatly refused to accompany his employers any further through the danger-lands whence we had just returned without trouble or hint of trouble. An altercation followed, and a rapid descent of the stairs by the interpreter. Shocking outrage, says the little town, ahum with scandal; just and mild remonstrance, says the offended paymaster. In any case, there is poor Mr. Mayer perfectly helpless, without a servant, and with no prospect of getting another, for the citizens are rich and very independent, and serve only where they choose—certainly never where they are frightened or annoyed—a catastrophe which, as many years in China have not led him to like the Chinese well enough to learn their language, leaves him in desperation as to his journey southward over the Alps after various fruits of Szechuan! Fortunately we, after long residence and our help in the siege, were in particularly good odour with populace and mandarins alike. Thus we were able to overcome the lack of sympathy for Mr. Mayer's troubles, interview the Governor for him, discover a servant and send him on his way rejoicing (though I hear subsequently that he did not accomplish more than a tithe of his journey anyhow, and stopped short of the Bad Land, having the luck to find his fruit-stones at a village quite close at hand beyond the Black Water).

These matters pending, Thundercrown abandoned most of its snow mantle in the brilliant heat. Up it at last we went, and the great mountain did our farewell visit honour in a day of cloudless glory. Brown and sere by now were all the rolling downs that climb to its cirque of precipices. My task this day was to ascend the screes on the right after *Delphinium* and a certain very lovely *Allium*, while Purdom ascended towards the summit by the huge couloir to get the little golden *Potentilla*. My way was delayed again and again by Blue Water, Gentian, and *Sweetia* in ripe seed, by the *Hirculus Saxifrage*, and by the big *Edelweiss*. For of this species there are at least three forms, or sub-species, in these Alps. The common flannel flower abounds low down, by the highway sides, everywhere throughout S. Kansu; in the mid-most Alpine pastures lives a very much finer thing, akin to *L. himalayana*, with ample rosettes of very narrow, pointed, glossy-green leaves, delicate tall stems, and noble flower-heads; higher yet in the earth pans and screes below the summits, lives a cushiony plant with short blunt foliage of silver whiteness, of effect quite beautiful, but not borne out by the dwarfish stems and their fat, faw-rayed heads of blossom, which, as I have always seen them, are dingy and dirty and indeterminate in tone. At last, however, I reached the level of the *Delphinium*. After a few freezing failures I succeeded in finding capsules still containing seed, and thenceforth rambled up and down among the shingles, pouncing on here and there a still productive pod. As for the *Allium*, it was not perfectly ripe, but bulbs offered good hope, and seed to be matured below hardly a worse. This is a most beautiful species; I have only seen it occurring in this one high scree at 12,000 feet, where it forms tufts in the hard, bare soil at the top, and offers a lovely spectacle when it droops abroad its close, full heads of soft China-blue blossoms in early September, on their graceful stems of 3 or 4 inches. The bulbs and roots are of reddish tone, and whether the plant be truly distinct from *A. kansuense* I cannot yet surely tell. This last, abundant all up the border, whether in open turf at high or low elevations, or in the cool clefts of limestone cliffs, is a variable and complicated species. Its Alpine forms are its best, and this beautiful and much paler blue plant of the high screes may perhaps be only a development. In any case it is very conspicuous in its special charm and tone, and makes a worthy conclusion to our last ascent of a noble mountain that now, perhaps, we shall never see again. *Reginald Farrer.*

HARDY FLOWER BORDER.

ERIGERON HYBRIDUS ASA GRAY.

It would be interesting and possibly profitable to hybridisers as well as others if anyone could tell us the parentage of *Erigeron hybridus* Asa Gray, which received an Award of Merit from the Floral Committee of the Royal Horticultural Society on June 22. If one might hazard a conjecture as to one of the parents, *E. aurantiacus* might be suggested.

The plant is by no means a new one, as it has been in cultivation for several years and the writer has been acquainted with it in a few gardens for a considerable time, without having been able to obtain any information respecting its origin. It received an Award of Merit from the National Hardy Plant Society last year. *S. Arnott.*

* The previous articles by Mr. Farrer were published in our issues for September 12 and 20, October 17 and 31, November 14 and 28, 1914, January 2, February 27, March 6, April 10 and 24, May 1, 15 and 29, and June 12 and 19, 1915.

TREES AND SHRUBS.

AMERICAN AZALEAS.

A RECENT number of the *Bulletin of Popular Information*, issued by the Arnold Arboretum, states that no plants add more to the beauty of mountain slopes and forest glades in eastern North America than Azaleas, which are more abundant and more varied in the colour of their flowers in the Appalachian region than in any other part of the world. Of the ten species found in the eastern United States seven are established in the Arboretum, and the others from the extreme south, although in the Arboretum nurseries, are too young to show their ability to withstand the rigors of the New England climate. All Azaleas are now called *Rhododendrons*. The first species to bloom, *R. Vaseyi*, begins to flower at the beginning of May, and the flowers of the last, *R. viscosum*, can be found as late as the middle of July. The Azalea season

beauty and fragrance. *R. calendulaceum* is the next species to flower, and a few plants have already opened their orange, yellow or reddish flowers, which are not fragrant. This shrub is an inhabitant of the mountain regions from southern New York to Georgia, and is extremely abundant on the lower slopes of the high mountains of North Carolina and Tennessee. In flower it is the most showy of the American Azaleas established in the Arboretum, and one of the most beautiful of all flowering shrubs. A large mass of this Azalea has been planted on the slope below Azalea Path, and occasionally large specimens can be seen on the border plantations along some of the roads. The next species to flower, *R. arborescens*, is also a native of the mountain region from Pennsylvania to Georgia, where in sheltered valleys it sometimes grows from 15 to 18 feet tall. The flowers, which appear after the leaves are nearly fully grown, are white or faintly tinged with rose colour, and are made conspicuous by the long bright red filaments of the stamens; they are very fragrant

CEANOTHUS THYRSIFLORUS.

THIS *Ceanothus*, which is popularly known as the Californian Lilac, and may often be seen labelled in gardens as *C. divaricatus*, is the hardiest of the tall *Ceanothuses*. At Kew Gardens there are bushes in the open 10 feet to 20 feet high, and during May and June the plants produce a profusion of pale blue flowers. Specimens planted against a wall grow taller, and the species is thus an excellent evergreen for clothing the bare walls of high houses, being fast in growth. As the flowering is from the leaf-axils of the shoots of the previous season, pruning should be done as soon as the flowers fade. The variety *griseus* is also flowering freely at Kew Gardens against a wall: it is readily distinguished by the larger glossy green leaves and pale lilac flowers. *Griseus* is not quite so hardy as the type, and is said to grow wild only in Monterey, California. O.

NEW OR NOTEWORTHY PLANTS.

ROSA POKORNYANA.*

AN interesting Rose is now in bloom in the Kew collection, the identity of which has hitherto been unknown. It was raised some years ago from seeds of *R. rubrifolia*, but was soon seen to be distinct, and on reaching the flowering stage it became evident that the flower had been pollinated by bees from adjacent bushes of *R. canina*. for the plant shows the most unmistakable combination of characters of the two species. As it seemed likely that the hybrid might also occur wild a search was made, resulting in the discovery that two such hybrids have been recorded, both from localities where the two species grow together. In 1883 it was described by Borbas from specimens collected three years previously on the Szitnoherge, near Selmecz, Hungary, under the name of *Rosa Pokornyana*, Kmet, with the suggestion that it was a hybrid from *R. ilseana* (a synonym of *R. rubrifolia*) × *canina*, and its intermediate characters were pointed out. In 1892 it was independently described by Briquet under the name of *Rosa scopulosat*, with the record that it was found growing with its parents, *R. canina* and *R. ferruginea* (the latter a synonym of *R. rubrifolia*) on the Golet du Pais, in the Jura, Switzerland. Here, again, its intermediate characters were recorded, and they are equally apparent in the Kew plant, of which the seed-parent is known. The latter is one of the most distinct Roses in cultivation, and its peculiar glaucous purple leaves and young stems cannot be confused with those of any other species. Our own Dog Rose is too familiar to need description, and it suffices to say that *R. rubrifolia* has rather smaller flowers, with deep rose-coloured petals, and sepals without foliose appendages. In *R. Pokornyana* the sepals are also without appendages, while the flowers are as large as in *R. canina*, and the petals are light rose-coloured. The young shoots and petioles are suffused with purple, and the leaves have a peculiar glaucous character, though in other respects they most resemble *R. canina*. It is very floriferous and forms a large bush about 6 feet high. It is not the only hybrid Rose that has appeared accidentally at Kew, for the handsome *R. macrophylla* × *rugosa* appeared in this way, and when described in the *Kew Bulletin* (1910, p. 326) it was remarked: "It is impossible to obtain Roses true from seed gathered from the plants growing together in the collection, because of the cross-fertilisation caused by bees." This fact explains why Rose hybrids are so common in nature where the species happen to grow intermixed. *R. A. Rolfe*.

* *Rosa Pokornyana*, Kmet, ex Borbas, in *Oester. Bot. Zeitschr.*, 1883, p. 225.
† *R. scopulosa*, Briq., in *Bull. Soc. Bot. Genève*, VII., p. 27.



FIG. 1.—*ASTER ALPINUS NANCY PERRY*: FLOWERS BLUE WITH YELLOW CENTRES.
(See R.H.S. Floral Committee's Awards, *Gard. Chron.*, June 12, 1915.)

is therefore a long one. *R. Vaseyi* is a tall shrub with slender stems and of open irregular habit; in its home in a few isolated mountain valleys in South Carolina it sometimes grows to the height of 15 feet. The flowers are produced before the leaves appear, in small compact clusters, and are pure pink in colour, plants with white flowers occasionally appearing. With *R. Vaseyi* the *Rhodora* (*R. canadense*) blooms. This is a well known dwarf shrub often covering in the north large areas of swampy land with a sheet of bloom. The small flowers, however, are of a rather unattractive rose-purple colour. Naturally the *Rhodora* grows from Newfoundland to Pennsylvania and New Jersey. The next to bloom are *R. canescens* and *R. nudiflorum*, and although the two sometimes grow together the former is a northern and the latter a more southern plant, and is especially common in the Gulf States from eastern Florida to eastern Texas. The rosy-pink flowers of these plants open before or with the unfolding of the leaves, and in early spring fill the woods with their

and the young leaves have the odour of new-mown grass. Less showy in the colour of its flowers, perhaps, than the yellow-flowered Azalea, it is one of the most beautiful of all hardy Azaleas. The last species to flower, the Clammy Azalea or Swamp Honeysuckle, *R. viscosum*, is a common inhabitant of the swamps of the eastern states, especially of those in the neighbourhood of the coast. The small flowers are pure white and covered with clammy hairs, and the leaves are often of a pale bluish colour, especially on the lower surface. This plant is valuable for the lateness of its flowers, which do not open before the flowers of most hardy shrubs have passed, and for their fragrance. These shrubs are all good garden plants, although, like other *Rhododendrons*, they cannot be made to live in soil impregnated with lime. They are not often cultivated, however, because it is not easy to find them in nurseries, for few nurserymen in the United States care to take the time and trouble to raise such plants from seeds, the only successful way in which they can be propagated.

ORCHID NOTES AND CLEANINGS.

CATTLEYA TRANSYLVANIA.

At the Chelsea Show this beautiful and distinct hybrid was one of the most admired novelties in the collection of J. Gurney Fowler, Esq., Brackenhurst, Tunbridge Wells (gr. Mr. J. Davis), and was awarded a First-class Certificate by the Orchid Committee. By a mistake in copying the entry in the stock book the record of the wrong number was taken, and it was entered as *Laelio-Cattleya* with the wrong parentage. It was raised by crossing *C. Comet* var. *Leonora* (*Warneri* × *Dowiana*) and *C. Enid* (*Warszewiczii* × *Mossiae*). The cross contains the elements of four of the finest large-flowered *Cattleyas*, and in it the usefulness of *C. Warneri* is again demonstrated, its fine characters showing out in successive generations. The influence of the rose and purple colours in the parents to darken and intensify while practically eliminating the yellow of *C. Dowiana* is noteworthy, the colour of *C. Transylvania* being uniformly rose-purple, the lip wholly reddish-claret with some thin gold lines from the base.

C. Comet has been raised by Messrs. Charlesworth and Co., both from *C. Dowiana aurea* and typical *C. Dowiana*. The first, shown by J. Bradshaw, Esq., and recorded in the *Gardeners' Chronicle* for August 22, 1903, p. 143, was from the first-named combination. Later the Earl of Tankerville flowered the cross between *C. Warneri* and typical *C. Dowiana*, and named it *C. Leonora*, which now becomes a variety of *C. Comet*.

THE ROSARY.

THE ROSE DELL AT KEW.

THE Rose dell in Kew Gardens is situated at the south end, near to the Pagoda and Richmond entrance. The earlier-flowering Ramblers are now at their full beauty, and are generally planted in groups of varying size. There are two huge pillars—one might almost describe them as steep banks—of *Alberic Barbier*, and the growth completely hides the rustic poles, some 20 feet high, that support it. The dark, shining leaves of this *Wichuraiana* Rose provide an ideal setting for hundreds of flowers, which when fully expanded are creamy-white, and when half open a pleasing yellow. The coppery or salmon-pink shade of *Tea Rambler* is distinct; the clusters of fragrant flowers of this Rose are singularly beautiful. *Trier* is a Rambler of moderate growth, freely clothed with clusters of creamy-white flowers, the anthers in the centre being prominent. *Waltham Bride* forms a snowy mound with its white blooms, and the plant is supported by rustic poles 6 feet to 7 feet high. The rich rosy-pink polyantha variety *Tausendschön* is very beautiful in masses. *Ariel* is one of the newer singles, a fairly large amaranth-pink flower with a light centre. *Goldfinch* and *Shower of Gold* have orange buds opening to lemon-yellow. The scandent habit of the *Virginian Rambler* or *Ayrshire* Rose is pleasing, the double flowers being white, with a tinge of pink when opening. *Conrad F. Meyer* is a tall, vigorous *rugosa* hybrid, with silvery rose-coloured blooms, rather like those of *La France*. Sweet *Lavender*, one of Messrs. G. Paul's new singles, is much admired by visitors; the mauve-pink flowers have a lighter centre surrounding the golden stamens. *Diabolo* is a fine novelty with deep red semi-double flowers. Effective, crimson, and *Pink Pearl*, shell-pink, are valuable new varieties introduced by Messrs. Hobbies. The hybrid *rugosa* Mrs. Anthony Waterer is a free-flowering dark red variety, deliciously fragrant and attractive. *Rubin*, *The Garland*, *Gardenia*, *Una*, *Electra*, *Fellenberg* and *Seagull* are other showy sorts in flower at the present time. O.

EXHIBITION OF NEW ROSES AT BAGATELLE.

THE meeting of the jury on the new Roses sent for trial to Bagatelle (Bois de Boulogne, Paris) took place on June 19, under the presidency of M. Deville, the President of the Fourth Commission of the Paris Municipal Council. A Gold Medal was awarded to *La Rose de Mme. Raymond Poincaré*, obtained at the Rosary of L'Hay. A beautiful pink Rose, the petals of which are edged with red, and which is very freely-flowering and has good stiff stems, has also been awarded a Gold Medal. The raiser is Heer Leenders, the Dutch grower. This Rose bears the name of Mme. Marcel Delaney. A first-class Bagatelle certificate was unanimously awarded for the Rose *Queen Mary of Messrs. Alex. Dickson and Sons*. It is a beautiful Rose of a pure bright colour in which yellow and carmine are associated. The Rose is not only ornamental and delicately perfumed, but the tree is very vigorous and floriferous, almost without thorns, and carrying pretty foliage. Another Bagatelle certificate was awarded to a *Chambard* red Rose, *Eteincelante*. This is a Bengal hybrid, a very good substitute for the German Rose *Gruss an Teplitz*. The following Roses also obtained certificates:—*Louis Sauvage*, a multi-flowered Rose with numerous blossoms, small, and of a delicate red, produced by Turbat et Cie.; and *Gustave Bienvenu*, a *Wichuraiana* hybrid, semi-double, of an intense red, carrying numerous bunches of blossom and very fine, green foliage. This was produced by M. Nonin.

THE CONFESSIONS OF A NOVICE.

IN undertaking to write from time to time on the doings of the plants in my modest garden, I am hopeful that the mistakes that I may make will be pointed out by readers with the precision and kindness which should be the characteristics of good gardeners. This garden of mine is about an acre or so in extent, and though it is actively engaged in teaching me many lessons, I cannot pretend to the wisdom of the mature gardener. For with me gardening is a relatively new occupation. For many youthful years I flirted with such amusements as golf and tennis, but these pastimes which once seemed so serious are now seen for what they are—mere preliminaries to the grand passion—that of gardening. Hence I may claim the privilege of all lovers—to make and announce discoveries which are new only to myself. If I were a little younger I should call these notes love-letters to my garden. But my love is not blind. I am alive to the defects of the garden, and love it the more for them. This year, for example, it has played me sad tricks. The seeds of *Linums*, *Clarkias*, *Gypsophilas*, and other garden "annuals" sown in the open ground, have grown or not grown in the most erratic manner, and my neighbour, who does most of his planting of such things from the cold frame, is secretly pleased, whilst decorously sympathetic, to note how far my seedlings are behind his. Surely the germination of seeds is a mystery which science has so far failed to unravel. The text-books tell us the way it happens—when it does happen—and talk of plumule and radicle and epinastic curvature; but they are silent on the things of real import, the reasons for the variable and often long period of inanimation, for the slow germination of old seeds, and the capriciousness in such a season as this. For my part, I think that the unskilful gardener like myself must put down much of his loss to sheer stupidity. He waits and watches, and then waters. Waiting and watching are good, but the watering, unless it be done with real art, is fatal. The seeds are either washed down too deeply or else are floated away to sprout precariously where they are not wanted. This sowed

sowing is often as great a failure when the seeds grow as when they do not, and this because the gardener will plant them so thickly that cheek by jowl they spring up like *Mustard* or *Cress*, compete with one another for space and light and water, and starve in consequence. Having regard to the inevitable thickness of gardeners' thumbs, it is one of the minor wonders that good gardeners, such as work in the great gardens, are able to distribute the small grains so uniformly and justly distant from one another. Even they, however, are apt to err, and in their kitchen gardens may be seen many examples of too close seed-sowing.

Mine is a haphazard garden, and tasteful arrangements and due relations are not numerous, for the plants have to rise by stepping-stones of their dead selves to higher things. Nevertheless there is one corner wherein the hand of chance has wrought me a choice design. A great bush of the pale yellow or cream tree *Lupin* throws half of its flowering mass athwart a low retaining wall, and by its side is a tall and spreading clump of *Anchusa italica*, glorious with its deep blue. An expert who paid an unofficial visit to my garden, and found it bad, was pleased to express warm approval of this corner, and to use it as a text for a comminatory homily on garden art.

As is so often the case, the *Anchusas* are behaving erratically as to colour, albeit that in this light sand all are growing well. It would be worth somebody's while to solve the problem of the variation of *Anchusa italica* from seed. It looks a simple problem—as though the dark were dominant to the light, and that by seed-saving from one plant and by sowing separately the progeny, and their individual progeny in turn, races pure to dark blue might be isolated. Since, however, the plant is so easily propagated by root-cuttings it has not seemed worth anyone's while. Yet it is well to remember as an incentive to this little exercise in garden Mendelism that the *Anchusa* as now grown is a bad perennial, and that if propagated by seeds more permanently perennial plants might perhaps be obtained.

The expert came too late to see my Darwin Tulips, but, greatly daring, I told in his dubious ear my pride and discovery of the situation in which these Tulips should be grown. Hitherto I had thought that the Tulip was the show flower par excellence, and that it should be grown in breadths of pure colours. Now I know that the way to plant them so as to obtain the maximum effect and pleasure in their colour and grace is in the shrubbery among low-growing plants, such as young *Rhododendrons*. In groups of not more than three or four they give their full effect of beauty and surprise. From every point in your walk fresh groups come into view, and from the distant spaces between the shrubs coloured fires gleam. I prefer to mix the colours almost at hazard, taking care, however, that magenta shades shall be by themselves, for the first rule in gardening is not to exclude magenta but to isolate it. The method has the further inestimable advantage that in a spring such as that of 1915 the flowers blooming in the partial shade last twice or thrice as long as those exposed to sun. I intend to leave the bulbs in the ground, and with this intention I planted them about 10 inches to a foot deep and put a half-teaspoonful of basic slag at the bottom of each hole. Needless to say, this way of growing Tulips is not new; it is new to me, and gives me as much pleasure as though no one had ever discovered it before. I am going to abolish my ribbon border of yellow *Crocus* and plant the corms in like manner, but in somewhat larger groups. The lesson I am learning is this, that, as Whistler once remarked, no connoisseur drinks good wine—he sips it. So we require to find for each kind of plant the amount of mass to produce the maximum effect, and to evoke the illusion of variety, without which the most beautiful things soon pall. A. N.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XXXIV).

DANS LE LIMBOURG BELGE.

UNE correspondance récente nous fournit les renseignements suivants sur la situation dans la région fruitière du Limbourg :

L'état des plantations fruitières est généralement bon. Les Pommes et Poires promettent une récolte extrêmement abondante, surtout aux environs de Tongres. Dans la région de St. Trond certains parasites ont fait des dégâts dans les vergers à fruits à pépins.

Les fruits à noyau sont moins abondants que l'année dernière.

[Suivant des renseignements reçus d'une autre source, Prunes et Cerises sont abondantes aux environs de Saint Trond et dans le Pays de Herve (Nord-Est de la Province de Liège). R.]

La vente dans le courant de l'hiver dernier a été très peu active; toutes les communications ayant été interrompues pendant les mois de septembre et d'octobre, on prit très peu soin des fruits et de grandes quantités se décomposèrent. Vers le milieu de novembre une hausse se manifesta, les Pommes furent achetées au prix de 20 à 40 francs les 100 kilos, surtout pour Maastricht, d'où elles furent sans doute expédiées en Allemagne.

En ce qui concerne les produits agricoles, vous connaissez probablement les difficultés rencontrées pour l'alimentation de la population. Tous les prix ont régulièrement haussé jusqu'au mois de mars; depuis lors la baisse a été graduelle. Ci-dessous les cours de quelques produits importants, le tout aux cent kilos.

Froment.—Octobre 20fr., novembre 25, décembre 35, janvier 50 à 70, février 100 à 120, mars 145 à 150, avril 90, mai 60.

Seigle.—17fr., 20, 30, 35, 50 à 70, 90 à 110, 65 et 50.

Avoine.—17fr. 50, 23, 30, 34, 40 à 50, 60, 45 et 40.

Pommes de terre.—6fr. à 7fr., 8 à 9, 10 à 11, 13 à 15, 20 à 23, 20, 15, 12.

Les prix de l'Orge ont suivi la même courbe, passant par 35fr. (début), 128 (mars), 40 (mai).

Les Betteraves fourragères valaient 30fr. les 1,000 kilos, le foin 100fr., le foin de Trèfle 130fr.

En ce moment aucun fermier ne possède des réserves. La récolte des céréales d'hiver aux environs de Tongres était d'ailleurs réduite à la suite de gelées de l'hiver 1914.

Les prévisions pour la récolte sur pied sont satisfaisantes, excepté pour les Betteraves sucrières; la "plantation" a été faite sans engrais chimique; la sécheresse prolongée aidant, le développement est insignifiant.

Les emblavures de Froment et de Seigle sont beaucoup plus étendues que l'année dernière, leur apparence est bonne. B. C.

CONCOURS DE ROSES NOUVELLES À BAGATELLE.

LE Jury de Bagatelle s'est réuni le 19 juin; il était présidé par M. Deville, Président de la 4e Commission du Conseil municipal de la Ville de Paris.

Une Médaille d'Or a été attribuée à La Rose de Mme. Raymond Poincaré, obtenue à la Roseraie de L'Hay.

Une très belle rose Rose, dont les pétales sont bordés de rouge et qui, à une floribundité remarquable, joint l'avantage d'être portée par un pédoncule extrêmement rigide, a valu également une Médaille d'Or à Leenders, le semeur hollandais.

Cette Rose porte le nom de Mme. Marcel Delanney.

Le premier Certificat de Bagatelle (Certificat

No. 1) a été unanimement accordé à la Rose Queen Mary, d'Alex. Dickson. C'est une Rose admirable, d'une couleur vive et pure, où se mélangent sans se confondre le jaune et le carmin. Non seulement la Rose est belle et délicieusement parfumée, mais encore le Rosier est très vigoureux, florifère, presque sans épines et son feuillage est fort agréable.

Un autre Certificat de Bagatelle a été attribué à une Rose rouge de Chambard, Etincelante, hybride de Bengale, qui remplacera très avantageusement la Rose allemande Gruss an Teplitz, à laquelle elle est supérieure.

Deux Certificats de Bagatelle ont été obtenus par les Rosiers sarmentueux :

Louis Sauvage, multiflore à fleurs nombreuses, petites, serrées, rouge très foncé, semé par Turbat et Cie., et Gustave Bienvenu, hybride de wichuraiana, semi-double, rouge cramoisi intense, portant de nombreuses fleurs en bouquets sur un beau feuillage vert solide, obtenu par Nonin.

NOUVELLES DIVERSES.

NOUVELLES DE LA GUERRE.—M. Marcel Bossière, secrétaire de la rédaction du *Moniteur d'Horticulture*, ancien élève de Versailles, a été tué à N. D. de Lorette, "en brave et sans avoir jamais faibli." Le fils de notre ancien confrère de la *Revue Chrysanthémiste*, M. Jean Bleton, a disparu à Carency. M. Chapeau, jardinier à l'Espinossa (Haute Vienne), cité à l'ordre du jour, est également tombé au champ d'honneur. *Le Jardin* annonce aussi que le fils de M. Lesimple, le jardinier en chef du palais de Fontainebleau, vient d'être blessé.

DISTINCTION.—L'aspirant de médecine de l'armée belge, Derom, appartenant à une firme bien connue de viticulteurs de Hoeylaert, a été nommé chevalier de l'Ordre de la Couronne, pour, ainsi que nous l'apprend la citation à l'officiel, l'initiative, le sang-froid et le dévouement dont il a fait preuve dans toutes les missions qui lui ont été confiées au cours de la campagne.

LA SITUATION HORTICOLE EN FRANCE.—Au début de juin les informations du Ministère de l'Agriculture la présentaient sous un jour assez favorable. Le retard de la végétation observé fin avril a été largement regagné par le relèvement de la température et la fréquence des pluies en mai. La récolte des fruits s'annonce comme devant être assez abondante, surtout pour les fruits à pépins. Dans certaines régions les chenilles causent des dégâts. Dans le Midi la situation est assez variable. Dans la Dordogne, le Tarn-et-Garonne et le Lot-et-Garonne la récolte des fruits paraît devoir être moyenne. Les primeurs étaient très belles dans le Tarn-et-Garonne; dans le Pyrénées Orientales les cultures ont souffert de l'humidité.

LES NEUTRES ET LA GUERRE.—Nos lecteurs se rappellent la fièvre protestation que M. Correvon de Genève adressa au *Gardeners' Chronicle* à la suite des attaques dont il avait été l'objet de la part de la presse horticole allemande qui lui reprochait sa sincérité dans l'appréciation des atrocités commises en Belgique. Dans une lettre adressée au *Jardin*, M. Correvon fait connaître les sentiments de la Suisse et termine : "Horticulteurs du monde, mes frères, travaillons à l'affranchissement de notre commerce et à sa libération de l'influence teutonne et nous aurons bien mérité de la civilisation. Nous savons créer; pourquoi nous laissons-nous débarquer par ceux qui savent adroitement imiter?"

Ayons leur patience—nous suivons en ce moment une école de patience—leur ardeur au travail, qui dégénère souvent, hélas! en matérialité; ayons leur persévérance et, avec l'intelligence des Latins, nous arriverons à nous libérer de ces fournisseurs-là. Maintenant qu'ils ont décrié le fameux traité de Francfort, joug affreux qui pesait sur toute l'Europe, nous allons voir se modifier le régime des affaires. Mais ne nous laissons pas alourdir par le bien-être et matérialiser et souvenons nous que ce sont ces choses-là qui ont perdu ce peuple de parvenus."

LES FRUITS FORCÉS À BRUXELLES.—Une forte baisse s'est fait sentir pour tous les produits. L'abondance des Fraises qui, par suite des difficultés de transport, doivent à peu près toutes s'écouler dans la capitale, n'y est pas étrangère. Le Raisin faisait, au 17 juin, 1fr. 50 à 2fr. 80 le kilo, la Tomate 0fr. 80 à 1fr. 20, la Pêche 0fr. 30 à 0fr. 80. Le Raisin est plutôt rare, mais il n'y a jamais eu, à cette époque, autant de Pêches que cette année. On raconte que des acheteurs allemands vont s'établir dans les centres de production en vue d'y acheter les fruits. La situation deviendra bientôt critique : les envois vont en augmentant et Bruxelles n'est pas à même d'utiliser toute la récolte. On redoute la même crise que l'année dernière. Aussi semblable décision de la part des Allemands ne serait-elle pas vue de mauvais oeil.

L'ALIMENTATION DE LA BELGIQUE.—Comme suite aux efforts de la section agricole du comité national de secours et d'alimentation en Belgique, la Société royale d'horticulture et d'agriculture "Lionaeus" de Borgerhout (Anvers) a encouragé, d'une façon pratique, la culture des Pommes de terre et des légumes, par les sans-travail. Un terrain de 15 hectares a été mis à la disposition de 590 ménages nécessiteux. Les Pommes de terre et les semences ont été remises gratuitement aux intéressés : 25,750 kilogrammes de tubercules, des semences de Cerfeuil, Persil et Salade, 1,700 plants de Choux ont été distribués.

LES ASPERGES À MALINES.—A la suite de l'isolement de Malines décidé par les Allemands parce que les ouvriers refusaient de coopérer à des travaux militaires, les Asperges, spécialité des environs, ont été vendues à très bon compte. Le prix normal est de 0fr. 60 à 0fr. 80 la botte de 1 kilo; dernièrement il serait descendu à 10 centimes!

KORT OVERZICHT VOOR DE VLAMINGEN.

EEN onlangs uit Belgisch Limburg ontvangen brief geeft ons inlichtingen over den stand van het fruit die over 't algemeen gunstig is. Appelen en peren vooral beloven een zwaren oogst.

In't begin van den winter lag de handel gansch stil en veel fruit ging verloren; later werd nog al verkocht voor Maastricht van waar het waarschijnlijk naar Duitschland trok.

De eetwaren sloegen geregeld op tot in Maart, dan verminderden de prijzen. Tarwe stond, rond Tongeren, 20fr. in October, 145 tot 150 in Maart, 60 in Mei. De aardappelen stegen tot 23 frank.

De veldvruchten staan thans goed, met uitzondering der suikerbeeten die te veel van de droogte leden.

Rond Brussel zijn de prijzen voor serrefruit laag. Nooit kwamen zoo veel perziken ter markt als nu. Duitschers zijn van zin de vruchten op groote schaal naar Duitschland te voeren.

Ten gevolge der afsluiting van Mechelen zouden de Asperges daar tot 10 centiemmen per bot verkocht geworden zijn.

The Week's Work.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

BEGONIA.—The earliest plants of Begonia Gloire de Lorraine and similar varieties should be potted into larger receptacles as soon as the roots show through the drainage holes or against the sides of the pots. Plants intended to be grown as large specimens may be potted in 6 or even 7-inch pots, but the most useful sized plants for decorative work are those grown in 5-inch pots, and for the latest batch 3 or 4-inch pots will be suitable. For potting soil, use a mixture of good turfy loam, leaf-mould, a little dried cow manure, and sprinklings of sand and soot. Maintain a genial atmosphere, and let the night temperature be 60° to 65°. Shade heavily to keep down the temperature, and syringe freely amongst the bare places, and also lightly overhead until the plants are well established. At that stage they may be grown in a cooler house or frame, for this treatment will cause them to remain longer in flower. This Begonia makes a charming basket plant for hanging in corridors and similar places. For basket plants a little peat may be added to the compost, as this material retains much moisture. Fumigate the plants at short intervals to keep down attacks of insects.

CHRYSAETHYMUMS.—Repot the plants before they become pot-bound. Use a compost as recommended in the issue for May 22, and in all cases provide ample material for drainage. Pot firmly, and do not employ pots larger than is necessary unless two or three plants are to be grown in the same receptacle, for it is much better to feed the plants at a later stage than to overpot them. Stand the plants in a sheltered position out-of-doors, fully exposed to the sun. The shoots of large-flowered varieties should be secured to stakes or wires as they increase in growth. Syringe the foliage and the immediate surroundings freely both night and morning, and spray the plants occasionally with a weak insecticide.

PERPETUAL-FLOWERING CARNATIONS.—Most of the plants of winter-flowering Carnations should, if required to produce flowers early in the autumn, be stopped for the last time, but July is too late to stop such varieties as Britannia, Baroness de Bienen, Carola and those of similar growth if required to flower early. Most Carnation catalogues give the latest date at which such varieties should be stopped for early flowering, and growers should be guided by the advice, according to the time the flowers are required and the district, whether north or south. Those who were unable to procure sufficient cuttings for early propagation and rooted their plants late in the spring should pot the plants at once into 6-inch pots, in which they will grow to a useful size and produce quantities of good flowers during the winter. Keep the plants free from thrips and red spider by syringing lightly from time to time with clear, weak soot-water and occasional syringings with salt water—one ounce of salt in two or three gallons of water.

GENERAL REMARKS.—Sow seeds of *Humea elegans*, *Calceolarias*, *Cineraria*, *Mignonette*, *Mysotis* Royal Blue and *Campanulas*, including *Canterbury Bells*. For *Humea*, *Calceolaria* and *Cineraria* use very fine soil. The seed needs little or no covering. A second sowing may be made later according to the time the plants are required in flower. Such plants as *Stephanotis floribunda*, *Allamanda Bougainvillea*, *Streptosolen Jamesonii*, *Heliotrope*, *Lapageria* and *Fuchsias* trained as climbers need frequent attention in tying and training the shoots to prevent them becoming untidy. All such plants that have a large spread of foliage and flower freely need frequent and liberal supplies of liquid manure and other stimulants. Plants growing in large pots, tubs and narrow borders also need feeding. Nearly all these plants need to be

syringed freely with clear water on bright days to keep them free from insects. Fumigate also if necessary, as success depends largely upon cleanliness. The same remarks on watering and syringing apply to hard-wooded plants such as *Rhododendron indicum* (*Azaleas*) which have completed their growth. It is not too late to insert cuttings of *Pelargoniums*, *Salvia splendens*, *Fuchsias*, *Abutilons*, *Eupatoriums* and other soft-wooded, winter-flowering plants if earlier stocks have failed.

FRUITS UNDER GLASS.

By JOHN HIGGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

SUCCESSIONAL PINES.—If a large number of fruits appear likely to ripen together, and thus cause a glut, some of the plants may be removed to a cooler house to retard the ripening. Plants of the smooth-leaved varieties, such as *Cayenne* and *Charlotte Rothschild*, which are intended to furnish a supply of ripe fruit during the winter, should be hastened into growth by increasing the temperature, and providing more moisture to the roots and in the atmosphere. Water the roots at all times with caution, and never in dribbles, but copiously when necessary. Attend carefully to details, such as ventilating and syringing; by closing the house early in the afternoons on fine days the requisite temperature can easily be maintained without the use of fire-heat.

LATE VINES.—The final thinning of the bunches of such late varieties as *Lady Downes*, *Black Alicante*, and *Gros Colman*, should be completed. All Grapes in the centre of the bunch should be removed, leaving each berry that remains plenty of room to develop. Attend regularly to the stopping and regulation of the growths. In the case of long-keeping varieties, it is necessary that the bunches should be protected by a good covering of foliage, as this tends to keep them in a fresh condition for a much longer period when ripe. During fine weather admit air freely, especially during the stoning period. Guard against scalding of the berries, which usually takes place at this stage. To overcome this trouble the valves of the hot-water system should be turned on a little early in the morning, and ventilation should be attended to with extra care.

ORCHARD HOUSE.—The fruits in orchard houses are in various stages of development and the trees require attention several times a day. Keep them well supplied with water and feed the roots liberally, either by top-dressings of rich soil or frequent applications of manure water. The amount of liquid manure afforded each tree should be regulated by the size of the pots, and the number of fruits. On no account let the trees suffer from want of moisture at the roots. Thin the fruits of later varieties finally and pinch the lateral growths regularly. Syringe the trees at least twice a day during hot, dry weather, and increase the amount of ventilation as the season advances. Discontinue feeding the roots as the fruits ripen and reduce the amount of atmospheric moisture.

CUCUMBERS.—Plants growing in heat that have been fruiting for some time past are showing signs of exhaustion, and should be discarded to make room for another batch. It is most probable that these old plants are infested with red spider; therefore let the house be cleansed thoroughly and the woodwork and walls syringed with a weak solution of paraffin. Afterwards open all the ventilators to their fullest extent and allow them to remain open for at least a day before replanting begins. Cucumbers in pits and frames are on the point of fruiting, and will be benefited by a top-dressing of rich loam and stable manure, and should be fed with liquid manure. Admit air with caution and damp the walls and bare surfaces frequently. Remove the superfluous growths and stop the leading shoots from time to time. Seeds may be sown now and the plants grown on in pots to furnish Cucumbers late in the season.

TOMATOS.—Plants for fruiting in winter should be raised from seed sown now, and another small sowing may be made in about three weeks' time. The variety *Winter Beauty* when grown in cool treatment in the earlier stages is

a sturdy, short-jointed grower, sets its fruits freely, and will continue to bear over a long period. Sow the seed thinly in shallow pans or small pots, and as soon as the seedlings appear stand them on a shelf close to the roof-glass. When the first rough leaf has formed shift the plants into 3-inch pots, using a rather free compost. Place the pots on a shelf in a cool house and, should the plants be inclined to become drawn, remove them to a cold frame. As soon as the plants get over this shift they will grow rapidly, and should be transferred to 6-inch pots before the roots become pot-bound. A similar compost may be used. Pot rather firmly to encourage a sturdy growth. Water should be afforded sparingly until the roots have grown in the new soil. Stand the plants well apart so that each may be well exposed to the light.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

RETARDING SMALL FRUITS.—The fruits of Red and White Currants, also Morello Cherries, planted against north walls, should, as they ripen, be covered with several thicknesses of nets or canvas to retard their ripening, so that they will furnish a succession late in the year. Late Gooseberries, or other small fruits growing in quarters or rows, should be examined, and such as are suitable covered in a similar manner.

RECENTLY GRAFTED TREES.—The trees should be examined from time to time to see that the ties are not so tight as to injure the bark of the scion. Should this be the case remove the ties and secure the young growths as directed in a former calendar.

BLACK CURRANTS.—Bushes trained against north walls need attention. This method of growing Black Currants is an excellent one for small gardens, where economy of space is desired or in situations where other fruit trees will not succeed. Carefully regulate and thin the shoots, retaining only those which will be tied in now, or that will be needed after those which are bearing are cut away. Aim at furnishing the trellis or wall from the bottom to the top with fruiting branches for next year, remembering that this Currant bears best on young wood of the previous season, and not upon spurs like the red and white varieties.

WALL TREES.—The first summer pruning of wall trees should be done forthwith. The neglect of summer pruning, or pinching, is particularly detrimental to Apricots, and such trees as produce their fruit principally upon one-year-old shoots. It also causes great perplexity to the pruner to regulate the shoots when they are allowed to grow too long unchecked, neither can the work be done so satisfactorily as earlier in the season. On the care and attention the trees receive now in pinching the shoots, thinning the fruit, and destroying insect pests will depend in a great measure the crop next year. Continue to nail or tie the young shoots of Peaches and Nectarines. Examine Apple, Pear, Plum, and Cherry trees frequently, pinching or removing entirely all superfluous growths, and keeping the foliage clean by the frequent use of the garden engine or syringe, directing the water to the under-sides of the foliage, as well as the upper surface.

GENERAL REMARKS.—Attend to the stopping, thinning and regulating of the young shoots. Thin the young shoots of Figs freely, as this will assist both the fruit and growths to mature. Should mildew make its appearance on Peach or Nectarine trees dust the affected parts with flowers of sulphur at once. Certain varieties of Peaches, for example *Royal George*, are very subject to mildew, but sulphur, if applied immediately the disease is detected, will prove an effectual remedy and be safer to use than washes. Raspberries should be well attended to for water and should be mulched, especially those that are newly planted. Old plantations of Raspberries should be cleared of all old growths as soon as the fruits are gathered. Later, thin the young canes to the number required.



FIG. 2.—HALESIA HISPIDA : FLOWERS WHITE. (See p. 7.)

THE FLOWER GARDEN.

By A. J. COBS, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

HALESIA HISPIDA (see fig. 2).—This plant is also known as *Pterostyrax hispidus*. The flowers are now developing and bear no resemblance to the well-known *Halesia tetrapetala*, "the Snowdrop tree." *P. hispidus* flowers freely, and the fragrant, white blooms hang in pendulous racemes. The plant is seen to best advantage grown either as a specimen on the lawn or in the foreground of a bold shrubbery. Propagation may be effected by seeds sown when ripe, or the plant may be increased by layering. The species is a native of Japan and forms a tree about 25 feet high, with slender, spreading branches, forming an open head. The leaves are large and attractive, ovate in outline and of light green colour. A peculiarity of the leaves is that the under-sides are sometimes tomentose and sometimes glabrous; foliage with both characters may develop on the same branch.

HUMEA ELEGANS.—Well-grown specimens of *Humea elegans* planted in suitable positions out-of-doors are very beautiful subjects. In order to raise plants for next summer, sow seed in gentle heat, and prick out the seedlings—which usually come up irregularly—as they become large enough for transfer. Pot on as required, and grow the plants in cool conditions. They should be established in 6-inch or 7-inch pots before winter, during which they must still be kept somewhat cool, and not given much water.

LUPINUS ARBOREUS.—Tree Lupins are splendid subjects for planting in sunny, dry positions, whether in the wild garden, bold flower border, shrubbery, or on a sloping bank. To raise plants for blooming next year, sow seed in cold frames and grow the seedlings on for planting out in autumn or early spring. Tree Lupins may also be raised from cuttings inserted immediately the plants have flowered. This method is usually only adopted to increase or retain the stock of a particularly good yellow variety, as seedlings are liable to be poor shades of this colour. Detach the cuttings from the main branches with a slight heel, and insert in pots filled with sandy soil. They will root readily in a close frame. The white variety, *Snow Queen*, has a somewhat prostrate habit, which enhances its effect in most positions. *Lupinus arboreus* is not a long-lived plant, usually three or four years, so that it is necessary to increase the stock by seeds or cuttings.

VIOLETS.—The dry, hot weather has made it necessary to water these plants frequently, for Violets must never suffer from dryness at the roots. Alternate waterings with weak liquid manure are very beneficial, and syringing the plants in the evening will help to keep red spider in check. An occasional dusting of soot over the plants will also act as a deterrent to this pest. A free use of the Dutch hoe will assist in retaining moisture in the soil.

HERBACEOUS BORDER.—Many of the plants in the hardy flower borders need staking and tying, and the soil should be stirred frequently with the Dutch hoe. The dry weather of May and early June has been very trying to newly planted subjects, necessitating frequent waterings. It is seldom that the rainfall during summer is sufficient for such plants as *Phloxes*, *Spiraeas*, *Delphiniums*, and *Paeonies*. Support must be afforded to plants as required, and in such a manner that the natural appearance is retained. Encourage bedding plants to become established soon by watering and syringing them, and hoeing the soil if necessary. See that shrubs planted since last autumn do not suffer from drought at the roots. Bamboos and Conifers transplanted within the past two years must be watered. Maintain neatness by keeping down weeds, clipping verges, and removing faded blooms.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq.,
Castleford, Chepstow, Gloucestershire.

EVERGREEN CALANTHES.—Such species as *C. Domini*, *C. veratrifolia* and *C. Masuca* may be given attention at the roots as roots commence to develop from the new shoots. Use a somewhat retentive medium, such as is employed for

the deciduous *Calanthes* and *Phaius*. All the species of this class will thrive in the intermediate house, while *C. Domini* has been cultivated in the cool division with a certain amount of success, but in a cold house the foliage is liable to become spotted. Provide ample shade and copious supplies of water throughout the growing period.

THUNIA.—If the plants are thriving, the pots will be filled with roots, and the flower-scapes developing on the more forward stems. Feed the roots with weak liquid cow-manure twice a week, or use the stimulant alternately with clear water for watering. When the flowers are fully expanded, remove the plants to another house where the atmosphere is drier and the temperature slightly lower, for in such conditions the blooms will remain fresh for a much longer period. Do not neglect the plants after the flowering season; grow them in a light situation and let them be supplied with water until the foliage begins to decay, when the amount of moisture at the roots should be reduced gradually. At the ripening stage the foliage is often attacked by red spider, but the pest may be kept in check if the plants are laid down and the leaves syringed vigorously with an insecticide. If it is desired to increase the stock of any particular variety remove the back stems, and cut them into lengths of four or five inches. The portions will root readily in a propagating frame. Very little rooting-medium is required, and it should be *Sphagnum-moss* cut up rather fine, with a moderate sprinkling of coarse sand. When the new shoot is formed afford the plant every encouragement to make rapid growth.

PACHYSTOMA THOMSONIANA.—This Orchid will require plenty of water for the next few weeks. The plants may be suspended from the roof-rafters at the warmer end of the Cattleya division.

MILTONIA VEXILLARIA.—As the various forms of *M. vexillaria* pass out of flower they should enjoy a partial rest in a slightly cooler temperature, and less water will suffice, but sufficient moisture must be given to keep the pseudobulbs plump and rigid. Examine the plants occasionally for the presence of insect pests.

ODONTOGLOSSUM PULCHELLUM.—This interesting *Odontoglossum* should be grown in the intermediate house during the winter, but in hot weather a cooler house should be selected. The plants are beginning to grow, and an opportunity occurs for affording fresh rooting material, which should be the same as advised for *O. crispum*. Guard against insect pests, especially thrips, which soon cause irreparable damage to the young leaves.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CARROTS.—The dry weather has delayed the thinning of the plants, which is becoming urgent, and should be done at the first favourable opportunity. Make a liberal sowing of *Model*, *Monument*, or some other good stump-rooted variety in ground that has been deeply cultivated as soon as the soil is in a suitable condition. This will prove a valuable crop throughout winter and spring. When the seedlings are well through the surface thin them carefully and use the hoe freely between the plants to keep the ground free from weeds. As the season advances frequent light dustings of soot may be applied with advantage during showery weather.

LATE POTATOS.—Late Potatoes should be earthed at once, and the crop may be given a little fertiliser in moist weather. The earliest plants growing on south borders are ready to dig; the ground will be useful for planting autumn Lettuce or Turnips, and these will require considerable attention in dry weather.

VEGETABLE MARROWS.—Marrows require attention daily in dry weather. Feed the roots liberally with weak liquid manure from the farmyard and remove worthless shoots. A slight sprinkling of artificial manure may be applied with advantage during showery weather.

FRENCH BEANS.—Make sowings of this vegetable weekly in a sheltered position until the middle of July. Plants growing on warm borders need watering freely, and, if dry weather

continues, the foliage damped in the afternoons in order to keep red spider in check. Mulch the ground between the rows with decayed manure and do all that is possible to keep the plants growing freely. It is better practice to make frequent small sowings than to gather pods from plants that are unhealthy or past their best condition of cropping. Allow plenty of space between the rows so that growth may not become drawn.

CUCUMBERS.—Shade lightly during the brightest part of the day plants in bearing and keep the atmosphere moist by damping the bed and walls of the house and syringe the foliage lightly in the morning and evening. Red spider is a troublesome pest of the Cucumber during hot weather, especially if the atmosphere is allowed to become dry or the foliage overcrowded. Attend to the stopping and thinning of young growths at least once weekly, for it is harmful to remove a large quantity of foliage at any one time. Top-dress the bed lightly whenever the roots appear above the surface, as this is the best means of keeping the plants healthy. Turfy loam and decayed manure are the best materials for the purpose. Thin the growth of young plants and stop the shoots, allowing no fruits to develop until the plants are well established.

THE APIARY.

By CHLOEUS.

WATER.—Every frame in the brood chamber is packed with larvae in all stages of development, and it is essential, if a good stream be not within easy distance of the hives, to supply the bees with plenty of pure water. If the bees cannot obtain pure water they will use the liquid from manure heaps and other undesirable places. In view of the prevalence of disease let the vessels be cleansed each time before refilling. It will also assist in keeping the bees healthy if grass is cleared from the vicinity of hives, and grass growing near kept very short, as the excreta from diseased bees contains germs that may infect healthy bees when they drink the dewdrops on the grass in the early morning.

DIFFICULTIES OF THE SEASON.—It is not uncommon at this season to find that bees show a disinclination to go into supers, the insects preferring to hang about the entrance under the alighting board or porch in large bunches. To overcome the difficulty take a few sections that are partly filled from another hive if there are none left from last year, and place these on the outside of the rack, and not in the middle, as some do. It is not uncommonly found, too, that bees refuse to work on sections where starters only are used, therefore full sheets always should be fitted in the sections. Even when these details have been attended to the bees may refuse to work above. This may be due to an excess of heat, owing to a lack of shade; and in that case shade must be provided.

TIERING.—Where bees are working hard on supers a watch must be kept or they may swarm. To prevent this, remove one or two full frames of brood and place them in hives requiring strengthening, and in their place put in one or two frames fitted with full sheets of foundation. If the sections or shallow frames be half to two-thirds full then add another super under the partially-filled one. In this country it is not often that three supers will be filled in one season, and if more are added there is a danger that a number of partly-filled sections or frames will be left on hand at the end of the season.

REMOVING SECTIONS AND FRAMES.—It is not often wise or even practicable to allow supers to remain until every cell is filled and sealed. To leave honey on the hive will cause the cappings to become seriously travel-stained and the edges to be covered with propolis. Where it is considered that the supers are nearly filled place a board with a bee escape in the centre underneath, raising the full one by a screwing motion. When bees are molested they often seriously pierce the cappings, and the use of the board prevents this. If the board be put under in the evening every bee will have left it before the next mid-day. Sections that are imperfectly filled may be placed on the outer layer of a new lot.

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APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 6—

Roy. Hort. Soc's Summer Show at Holland House, Kensington (3 days). Scottish Hort. Soc. meet. Gloucestershire Rose and Sweet Pea.

WEDNESDAY, JULY 7—

Penarth Flower Show.

THURSDAY, JULY 8—

Manchester and N. of Eng. Orchid Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 62.3.

ACTUAL TEMPERATURES:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, July 1 (10 a.m.): Bar. 29.4, Temp. 60°. Weather—Dull.

The Cultivation of Vegetables.

There is good reason for saying that vegetable cultivation formerly constituted a far more important feature in ordinary gardening than is the case to-day, when our gardens are devoted so largely to what may be conveniently termed ornamental horticulture. One of the results of the absorbing interest now taken in decorative gardening is, unfortunately, that the younger professional gardeners no longer give the specialised attention to the cultivation of the kitchen garden that was forthcoming from the more eminent of their predecessors.

There are circumstances also that tend to discourage the public demand for superior vegetables. It is an unfortunate incident of town life that a large proportion of the population is obliged to make daily use of the public restaurants, and in most of these places the treatment of vegetables is execrable. Even in the fashionable restaurants, where no fault can be found with the manner in which meats and other articles of food are presented to table, the vegetables show often and unmistakably that no care whatever is expended upon the cooking. In this way many who are critical enough as regards the quality of a steak, become sadly indifferent to the qualities of the vegetables they consume; the result being that they scarcely know

good from inferior produce. This being the case, there is every need for gardeners and cooks in our country homes so to direct their energies that our tables may always be furnished with the choicest garden products presented in their most tempting form. With such an education as this would provide, those who are country-bred would develop a keen appreciation and constant desire for the choicer kinds of vegetables.

With respect to the forcing of early vegetables, whilst we as a nation may learn much from the French, who are so successful with their cloches, and average cultivation in our own land has not risen to so high a standard as in France, at the same time there have been numerous instances at all periods in which Englishmen have excelled in this important detail of gardening. The old northern gardeners who used their improvised frames containing hot-beds formed of leaves and manure were in the habit of raising early crops of many of the kinds best known to the French garden, and Peas, Beans, Asparagus and Potatos, amongst others, were raised quite early in the year.

But, nevertheless, the attempts to raise early vegetables and salads are sporadic and inadequate, and we would impress upon our readers the importance of devoting more attention to the subject. Much talk is sometimes indulged in about forcing things out of their natural season, and it is probably true that, in many instances, the quality suffers in proportion to the amount of forcing indulged in. A hard forced Strawberry, for instance, can scarcely be expected to have the same delectable qualities as a fruit picked on a hot summer's day whilst still warm with the sun's rays. Yet the first fruit, and, for the matter of that, the first new Potato, whether from the frame or from out-of-doors, has a fascination of its own, and if it is specially early it is some satisfaction to the gardener, inasmuch as it is the result of his skill in controlling circumstances unfavourable to his crop.

The interests of the public demand that early vegetables and salads shall be exhibited more frequently at the spring shows in London. In the case of many of the May exhibitions that took place in the gardens of the Inner Temple, there were collections of vegetables exhibited from private gardens, and choice collections of indoor fruits also from private gardens. But for some reason or another the vegetables at these shows have so fallen off that scarcely any is left, excepting the collections contributed by the Hon. Vicary Gibbs, and these represent the highest cultivation of vegetables ever attained in Britain. But whilst appreciating fully these extraordinary collections, which deserve all the credit that can be given them, we maintain that more private gardeners should endeavour to obtain laurels in the same field as Mr. Edwin Beckett, the head gardener at Aldenham. It has been whispered that the reason

for the absence of further exhibits is to be found in the fact that Mr. Beckett is able to put up something that no gardener can hope to equal.

In any case the Royal Horticultural Society would do well to consider whether special inducements could not be offered with a view to encouraging more frequent displays, not only of vegetables, but of fruits, at the Chelsea Shows. For, after all, such extensive exhibitions as those promoted at Chelsea year after year are far from perfect, so long as they are lacking in sufficient representative collections of the more important products of gardening. Indeed, their absence is a fault calling for immediate remedy.

With a view to assisting any who have the desire to cultivate vegetable crops that mature in May, we have obtained from Mr. Beckett some details concerning the cultivation of the produce exhibited at Chelsea this season. The collection included some seven dozen dishes, exclusive of salads. Of the Peas exhibited, the variety Quite Content was sown in the first week of November, and bore a huge crop on haulm eight feet high. Edwin Beckett was sown on cember 1, and Little Marvel on December 15, and with Duke of Albany and Early Giant they produced quantities of excellent pods well filled with Peas. Of Broad Beans there were Mammoth Long Pod and Exhibition; both varieties were sown on November 5, in pots and boxes placed in a Peach house. Of French Beans, Canadian Wonder—still one of the very best varieties—was sown on March 1, Magnum Bonum on March 8, and Golden Wax Pod and Ne Plus Ultra four days later. Globe Beet was sown on January 19 and Chilian and Seakale on January 7. The Broccoli was obtained from plants raised from a sowing made in the open on May 1, 1914, and the varieties included Model, Late Queen, Satisfaction, Standwell, and Latest of All. The Cabbages included Harbinger and April, both sown on July 16. Harbinger is one of the best early varieties, and the rows of this Cabbage at Aldenham were of extraordinary regularity; among many scores of plants not one bolted. Of Cauliflowers, there were Magnum Bonum and Early Forcing, from a sowing made out-of-doors on September 13, and the heads exhibited were exceedingly choice examples. Amongst vegetable luxuries in May may surely be counted young Carrots of high-class quality. The varieties exhibited by Mr. Beckett were New Red Intermediate, Inimitable Forcing, Champion Horn and Favourite; all were sown in the latter part of January or in February. As uncommon as Carrots in May are Vegetable Marrows, for few growers would admit that they have sufficient space indoors for plants of sprawly habit like Marrows. But questions of this sort never appear to trouble Mr. Beckett, and he exhibited the varieties Table Dainty, Perfection, Long White, Long Green, The Sutton, Pen-y-byd, Moore's Cream and Custard: they were all sown on February 11. Of Cucumbers, King George, Al, Satisfaction, Ideal, and

Lord Roberts were all sown on March 5, and given liberal treatment.

Another extraordinary dish for May was the Celery in the Chelsea collection, Aldenham Pink and Solid White being represented by first-rate heads. The former variety is the best-coloured Celery for exhibition purposes. The Celery was sown on February 16 and the plants kept growing without interruption. Numerous fruits of Tomato made an imposing display, there being no fewer than ten varieties represented, including Yellow Perfection and Golden Sunrise amongst yellow fruits, and of red fruits, Sunrise, Perfection, Winter Beauty, Duke of York, and Peach Blow. It may be pointed out that the variety Peach Blow has superior quality, whether the fruit is eaten in an uncooked state or after cooking. Most of the varieties were sown in October and November, 1914. Potatoes included the varieties Duke of York, King Edward VII., and Exhibition Red, and they were all planted on February 18. Sweet, fresh Turnips were raised on hot-beds, and included Early Long Forcing, White Gem, Yellow Six Weeks, Early Milan, and its white prototype—all of these being sown in the first or second week in March. Lettuces were sown on January 4, including Golden Ball, Favourite, All the Year Round, Nonsuch, and Little Gem. Aubergines of the long white and purple varieties were sown on January 15, and Spinach of the Long Standing variety on March 1, but Perpetual Spinach was sown a month later. Radishes were raised from seed sown in the third week of April, and included Forcing Carmine, French Breakfast, and Forcing White Olive.

Mr. Beckett cultivates many of these early vegetable crops in boxes, and he has furnished us with photographs representing Peas in the one ease and Broad Beans in the other, which we reproduce in figs. 3 and 4. He makes no attempt to claim this form of culture as new, but having tested the box method for successive seasons, he describes it as capable of giving results of the most satisfactory character, and, further, as being economical of space. He is convinced that the professional gardener could frequently employ boxes with advantage, as the crops can be moved from house to house as required.

The roots, being confined, are well within the control of the cultivator with respect to supplying them with both food and water. Mr. Beckett has proved by experience that there is scarcely any kind that may not be cultivated to perfection by this means. The Broad Beans illustrated represent the variety Leviathan, and the Peas are Edwin Beckett and Quite Content. They are depicted with the boxes plunged in the ground, where they were placed in the last week of April. The size of the box in use at Aldenham is three feet eight inches in length, nine inches in width, and nine inches in depth; they may be easily made by an intelligent workman, and, with ordinary care, will last for years. The base should be well perforated, and two small strips of wood nailed on at each end for the convenience of moving the boxes.

Coloured Plate.—The Coloured Plate to be issued with our next number will represent a rockery exhibit at a Chelsea Show.

BIRMINGHAM CHRYSANTHEMUM SHOW ABANDONED.—The Committee of the Birmingham and Midland Counties Chrysanthemum, Fruit and Floricultural Society has decided to abandon the annual exhibition for 1915.

GARDENERS' ROYAL BENEVOLENT INSTITUTION (BERKSHIRE, READING AND DISTRICT AUXILIARY).—During 1914 the sum of £80 was forwarded to the parent institution by the Berkshire auxiliary of the Gardeners' Royal Benevolent Institution. This sum, although (in consequence of the war) less than in 1913, has brought the amount forwarded by the auxiliary

This gallant young officer obtained his captaincy on June 21, and has been for several weeks attached to the staff as Brigade Signalling Officer.

—The many friends of Mr. JAS. TULLY, gardener at Osmaston Manor, Derbyshire, will regret to learn that his elder son, Private W. TULLY, 2nd Gordon Highlanders, has been seriously injured at the front by shrapnel on the scalp. Mr. TULLY's younger son, CAMPBELL, is a member of the Grenadier Guards, in training at Caterham.

FLOWERS IN SEASON.—Sprays of the South American *Halesia diptera* are sent by Messrs. ROBERT VEITCH AND SON from plants in their nursery at Exeter. The species forms a small



FIG. 3.—PEAS GROWING IN BOXES AT ALDENHAM.

to the total of £1,454 16s. 6d. At the annual meeting, held on the 23rd ult., Mrs ROWLAND SPERLING was re-elected president of the auxiliary; the vice-presidents, hon. secretary and hon. treasurer were also re-elected.

CULINARY PEAS AT WISLEY.—The judging of the Early Pea trial took place on June 24, and the varieties recommended for Awards have been labelled in order to facilitate observation by those interested in the trial.

WAR ITEMS.—Lieut. F. RUSSELL COBB, son of W. Cobb, Esq., Normanhurst, Rusper, Horsham—a member of the R.H.S. Orchid Committee—has earned his captaincy at the front, and has been mentioned in despatches, whilst in the King's Birthday Honours his name is included amongst those winning the Military Cross.

tree or shrub and is very like the better-known *H. tetraptera*, but its leaves are larger and the white flowers more showy. The flowers are borne in profusion along the branches in racemes of two to four. Another species, *H. hispida*, is illustrated on p. 6. Mr. CHARLES HODGSON, Brent Eleigh Hall Gardens, Ipswich, Suffolk, sends flowering sprays of *Rosa gigantea* from the open, with the information that the plant had flowered previously, after the hot summer of 1911. It is exposed to full sunshine and is trained on an old tree trunk.

ASH AND BEECH.—Ash is being largely used in the manufacture of the framing of motor-transport wagons, aeroplanes and seaplanes. Beech forms a valuable timber for the manufacture of ammunition boxes and packing cases.

FRUIT CROPS AT ST. MALO.—The Board of Agriculture and Fisheries has received a report from his Majesty's Vice-Consul at St. Malo to the effect that Apples, whether for cider, cooking, or table purposes, promise an abundant yield in his district. Plums afford a better prospect than usual; Gooseberries and Currants are about an average, while Cherries are a good medium, if not a large, crop.

FORECASTS OF THE CORN CROPS IN ITALY, JAPAN, AND THE UNITED STATES.—The International Agricultural Institute publishes the following forecasts of the crops in 1915:—Italy—Wheat 108,264,000cwt., Rye 2,362,000cwt., Barley 3,937,000cwt., Oats 8,858,000cwt., Japan—Wheat 12,681,000cwt., Barley 41,790,000cwt.; United States—Wheat 508,942,000cwt., Barley 84,428,000cwt., and Oats 368,004,000cwt.

INDIAN WHEAT COMMITTEE.—The President of the Board of Agriculture and Fisheries has re-appointed the Indian Wheat Committee, appointed by his predecessor, to supervise the arrangements in this country connected with the scheme introduced by a notification of the Government of India, dated March 25, 1915, for the shipment of Wheat from India to the United Kingdom on Government account. The members are:—Rt. Hon. F. D. ACLAND, M.P. (Parliamentary Secretary to the Board of Agriculture and Fisheries) (chairman), Mr. R. H. REW, C.B. (Board of Agriculture and Fisheries) (deputy chairman), Mr. J. M. KEYNES (H.M. Treasury), Sir GEORGE SALTmarsh (the Baltic), Sir LIONEL ABRAHAM, K.C.B. (India Office), Mr. T. H. MIDDLETON, C.B. (Board of Agriculture and Fisheries), Mr. J. A. HUBBACK (India Office), Mr. H. D. VIGOR (Board of Agriculture and Fisheries) (secretary).

TEA.—The demand for Tea is increasing everywhere and growers are looking forward to particularly bright times. Already a large Tea consuming country, Russia will probably use more Tea as a substitute for vodka. But apart from an increased demand from countries which hitherto have not absorbed large quantities of Tea, a big consumption in the home market is virtually assured. The requirements of the Army alone are enormous, while the needs of the civilian population continue to grow. Although Tea promises to be much dearer than it has been during the past few years, it is still, perhaps, the cheapest and most stimulating beverage obtainable, and its popularity is certainly not on the wane among the masses of the population.

PRIZES FOR PLANS OF RUBBER ESTATE FACTORIES.—The council of the International Association for Rubber Cultivation in the Netherland Indies is offering prizes for plans for complete rubber estate factories for the making of (1) crepe and (2) smoked sheet. Both plans are to be adapted for a capacity of at first 200,000 lb. of dry rubber per annum, which by three extensions can be increased to 500,000 lb. The first prize is for 1,500 florins and the second for 500 florins. The plans must be sent before March 1, 1916, either to the office of the association, 13, Kneuterdyk, The Hague, or to the office of the Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatra, at Medan, Deli. Particulars can be obtained from the association.

GAME BIRDS AS WEED DESTROYERS.—The number of weed seeds eaten by birds on cultivated land must be beyond any assignable quantity. Game birds generally are the greatest eaters of weed seeds. They are also useful to man in several other ways. Not only do they devour mature locusts, but they scratch up and eat the eggs. They also consume in large quantities termites and other equally pernicious insects. The reckless shooting of game is to be deprecated. They are of far more use alive than in swelling the bag of the sportsman. The quail is perhaps the greatest weed destroyer of all the

game birds. It is doubtful, indeed, if the quail is not more useful to man than any other bird. It is very nearly wholly beneficial. During spring and summer it feeds on many of the most destructive of insects, and in autumn and winter it eats an enormous amount of seeds of many harmful weeds. The report of the United States Biological Survey says:—"It is reasonable to suppose that in the States of Virginia and North Carolina from September 1 to April 30 there were four quail to each square mile of land. The crop of each bird holds half an ounce of seed and is filled twice a day. Since at each of these two daily meals harmful weed seeds constitute at least half the contents of the crop, a half-ounce daily is consumed by each bird. On this basis the total consumption of harmful weed seeds by quail from September to April in Virginia and North Carolina amounts to 1,341 tons. As destructive insects form about one-third of the bird's food from June to August, quail consume 341 tons of these pests in these States within those two months." But perhaps the most valuable service that quail render the people of the United States is the greedy way in which—and they stand almost alone among birds in this particular taste—they eat the evil-smelling Potato bug. In addition to this inestimable service, it is partially due to this bird that the cotton boll weevil has not swept over the entire cotton belt of America, bringing ruin to thousands of human beings on both sides of the Atlantic. While speaking of the services which the quail renders to man, I may mention that there is—now that Great Britain has harnessed the Nile—a plain economic reason for our revolt against the present-day practice of killing Egyptian quail and shipping them abroad by hundreds of thousands to tickle the palate of gourmards. *Report of the Smithsonian Institute.*

Tobacco-Growing in Ceylon.—The experimental cultivation of Tobacco in Ceylon has proved, so far, that good Tobacco can be grown on the island. *The Home and Colonial Mail* states that the first crops have been harvested and cured, and gave a good quality leaf suitable for the European market. A consignment of the leaves has been shipped to London for the opinion of the expert of the Imperial Institute. There is a prospect of considerable encouragement being afforded to the wider cultivation of Tobacco of the American type in the British Colonies. Already Nyassaland, Rhodesia and Canada are raising Tobacco in increasing quantities.

FRUIT AND POTATO CROPS IN HOLLAND.—The Board of Agriculture and Fisheries is informed by His Majesty's Consul-General at Rotterdam that on June 1 prospects for the fruit crop in Holland were generally favourable. Plums are somewhat disappointing, but other fruits will probably give excellent results. Night frosts have caused some damage and Pears were slightly affected by insects. Apples promise a splendid crop. The conditions for the Apple crop are good in Groningen and most other parts of the country. Pears are also good throughout the country, except Gelderland and Leenwarden, where they are moderate. Prospects for early Cherries are very good in Limburg and in the Alblasserwaard, good in Gelderland and Overijssel, moderate in the Betuwe, and not good in the Hoeksche Waard. Excellent reports of late Cherries come from Limburg and Maas district, and good reports from Betuwe, Utrecht, Gelderland north of the Rhine and Overijssel. "English" Plums good in the south-east of Utrecht and the Alblasserwaard, moderate in Gelderland, Overijssel and South Beveland, and bad near the Maas and Waal rivers. The conditions for other Plums are very good in Limburg, good in Utrecht, Overijssel and Alblasserwaard, fairly good in the Westland district, and moderate in other districts. Tomatoes are fairly good in Overijssel and Utrecht, and in other districts good or very good. Prices are

69s. per cwt. Good to very good reports have been received of early Potatoes.

BLOSSOM FALL OF TOMATO.—The malady of the Tomato, characterised by the fall of the tips of the inflorescence, is ascribed by Brooks (*Phytopathology*, 1914, 4, 345) to the use of certain manures, such as sulphate of ammonia, dried blood and stable manure, presumably in excessive quantities. Excessive watering or a check due to lack of water are said also to induce the malady.

FRUIT CROPS IN CALVADOS, NORMANDY.—The Board of Agriculture and Fisheries has received from His Majesty's Vice-Consul at Caen a report on the prospects of the fruit crops by Le Directeur des Services Agricoles du Calvados as follows:—Cider Apples and Pears promise plentiful crops, as in the last three years, and as the markets are more limited than before the war, low prices must be expected as in 1914, when they were about 4s. per cwt. In the Honfleur district, where table fruits are especially grown, the prospects for wall Pears are bad, not exceeding a quarter of an average crop; but standard Pears promise a plentiful crop. There will be a moderate yield of Currants, and a poor crop of Plums.

HOME CORRESPONDENCE.

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

ROSES ON ROSA LAXA.—Inquiries of the superintendent at Wisley as to the merits of the R. laxa stock for Roses resulted in rather a curious yet most interesting answer. When transplanting into the borders from a trial bed some plants of Roses on Laxa stock and some on Briar, it was found that those on Laxa had a great mass of fibrous roots, those on Briar had quite typical Briar roots. It was expected that the Laxa ones would start away at once and be stronger than the others, but they did neither. So far as can be seen, there is now no visible difference in the Roses on the different stocks. What would have been the difference, if any, if the plants had not been moved will not be known before another season. *Rosa.*

POTATO DUNNOTAR CASTLE.—On April 1 I planted cut tubers of this early Potato in the open orchard among Apple trees. The total rainfall since planting has been but 3.77 inches. To-day (June 25) I lifted two roots; one produced twenty-seven tubers, weighing 3lbs., the other twenty-four tubers, weighing 2lbs. All were clean and shapely, and they cooked remarkably well. If the sets had been planted on a warm, south border they would doubtless have been much earlier. I regard this variety as one of the best early Potatoes, and it will. I am certain, rank as one of the standard varieties when better known. *E. Molyneux.*

MANURE FROM SPENT MUSHROOM BEDS (see p. 348).—Your correspondent who places spent Mushroom beds on a par as to manurial value with lawn mowings has probably done so without giving the point a thought, as the preparation of manure for the formation of Mushroom beds does much to prevent the escape of the ammonia, and to some extent causes this ammonia to become fixed until released by moisture for the use of plants. As animal manure is scarce this value is worth some consideration. It occurs to me that as Mushrooms contain a large percentage of nitrogen as food their cultivation should be much extended, especially where cavalry is billeted or camped and horse-dung is plentiful. The Board of Agriculture and Fisheries has issued a leaflet on Mushroom growing which can be obtained free. From this pamphlet it will be learned, and a little practice will prove, that Mushroom growing is an interesting, profitable and economical occupation to anyone who can obtain fresh horse droppings. *J. E.*

SEVERE FROST IN JUNE.—On the morning of June 19, after a very cold night, we registered 2° of frost on the grass, and the glass fell to 34° in the screen. Such crops as Vege-

table Marrows and Potatoes are severely damaged. This is surely most unusual at this time of the year, and the first time I have known even such tender things injured by frost so late in June. *E. Beckett, Aldenham House Gardens, Herts.*

CHINESE CYPRIPEDIUMS.—I have been reading and studying with considerable interest Mr. Reginald Farrer's account of the Chinese Cypripediums in the *Gardeners' Chronicle* of May 15. In my notes on the same subject, which appeared in your journal on December 12 last, I prophesied that he would return with some fresh varieties. I noted one mistake in his article. The synonym of spectabile is reginae, not hirsutum, which is a synonym of pubescens. He also speaks of fasciculatum as having a resemblance to the macranthon group. There is a fasciculatum of the North-Western Pacific slope (*Bot. Mag.*, 7275), which is very different indeed from them. He describes a "humble little cousin—a ramifying, running Cypripedium," which sounds like the Japanese debile (*Bot. Mag.*, 8183; *Gard. Chron.*, December 23, 1905). The last one of which he gives account is not unlike the American arietinum (*Bot. Mag.*, 1569), which Mr. F. Kingdon Ward found in Eastern Tibet. *W. Herbert Cox, 9, Gray's Inn Square, W.C.*

EXPERIMENTS WITH SILVER-LEAF DISEASE (see p. 354).—Will *Southern Grower* kindly inform me if he simply sprinkled the manures on the surface, allowing them to be washed down to the roots, or how? Will he also say if he has had any experience in the use of sulphate of iron by first removing the soil several inches deep in order that the effect of the material may be quicker? *M.*

WOMEN AND FARM WORK (see pp. 348, 358, Vol. LVII).—I am not so ignorant of present-day methods of farming as Mr. Molyneux supposes. I know every county in England and am acquainted with his own part of Hampshire, and am fully aware that farming is conducted there on enlightened methods. My letter was not intended to apply to that or any other particular district, but generally to try to stir up women to work and farmers to employ them when they are not doing so, and where there is a shortage of labour. Nor have I suggested the employment of makeshift methods as equal to modern and improved ones. I only suggest that makeshift is better than letting hay and crops rot on the ground, and I do not think it either necessary or advisable to mention the parts of the country where farmers allow such waste and loss rather than give up red-tape adherence to their own systems. Nor do I suggest that ladies of position should teach practical farmers, but that practical farmers should make use of the services of such ladies. show them what they can do, and get them to lead other women by their example. I have made hay myself, and am quite ready to help any farmer as far as my strength will allow. I do not propose to throw hay on to the top of a thirty-ton rick, nor can I here give details as to what else could be done in every place and under every circumstance. Mr. Molyneux must think anyone blind who does not know the height of a thirty-ton rick, since no one can go about without seeing one anywhere. A little more imagination is needed for adaptation to circumstances. *M. H. Mason.*

AZALEAS IN DIFFERENT ASPECTS.—For those who have to be content with a comparatively small number of plants representative of the different genera which they admire it is important that the most and best should be made of them. I planted a bed of Azaleas last autumn in a position where they are exposed to the sun all day. The plants grew well and flowered well, but on account of the sun being blazingly hot when the flowers opened they were but the creatures of a few days. On a border facing east and backed by high trees I have planted old Azalea bushes. These bloomed for weeks, the explanation being that they only got the morning and forenoon sun. To those thinking of planting Azaleas my experience may be suggestive. I am sure all small growers want as long continued a flowering period as possible and as much depth and brilliancy in the colouring of their flowers as they can get. *Amateur.*

SOCIETIES.

ROYAL HORTICULTURAL.

Floral Committee.

(Concluded from p. 360, Vol. LVII.)

In our last issue the descriptions were given of the novelties that gained awards at the meeting held on the 26th ult. We now print particulars of the general exhibits staged on that occasion.

CULTURAL COMMENDATION

to Mr. W. MILLER, Wisbech, for spikes of *Ornithogalum lacteum*, a bulbous plant native of South Africa (see fig. 60 in *Gard. Chron.*, April 10, 1915, p. 193). Specimens are frequently sent by residents in the Cape to friends in this country, but we have never seen imported flowers approach those of Mr. Miller's specimens in size or general quality.

OTHER NOVELTIES.

A species of *Rosa*, shown under the number Wilson's 666, and with the putative name of

was no label to indicate the exhibitor. The stems are about 9 inches to 12 inches high, terminating in cymes of pale-blue flowers and bearing linear leaves.

Mr. E. J. HICKS showed a pretty dwarf hybrid Tea Rose named Joanna Bridge. The petals of this single flower are apricot-rose, but the buds are deeper-toned and of exquisite shape.

Mrs. LLOYD EDWARDS, Bryn Oerog, near Llangollen, N. Wales, showed several seedlings of *Heuchera sanguinea*; the variety *Souvenir* C. Wolley Dod has brilliant-red and Lady Harlech reddish-pink flowers.

GENERAL EXHIBITS.

The following medals were awarded for groups:—

Gold Medal to Rt. Hon. LORD NORTH, Wroxton, Banbury (gr. Mr. J. R. James), for a magnificent exhibit of Sweet Peas. This large collection was arranged very attractively, and the blooms were splendidly fresh, of large size, and good in every other respect. Such varieties as R. F. Felton, Rosabelle, Robt. Sydenham, May Unwin, Hercules, Anglian White, Walter P.



FIG. 4.—BEANS GROWING IN BOXES AT ALDENHAM.

(See page 8.)

Rosa moschata var. *maculata*, was exhibited by Messrs. PAUL, of Cheshunt. It is a small, white cluster Rose, with foliage like a Tea variety, the leaves being reddish beneath, prominently serrated and with long points. The blooms are about 1 inch in diameter. We understand that the species has not been determined.

A rich blue Delphinium was shown by Mr. G. H. WARSELL, Basingstoke. The variety was named *Tatsiense Muriel*, it being a derivative of *Tatsiense* and *Persimmon*. The colour is intense velvety blue, each petal having a purple blotch near the tip.

Mr. A. F. DUTTON, Iwer, Buckinghamshire, showed a remarkably fine yellow *Carnation* of the perpetual-flowering type, said to be suitable for the border. The bloom is a pale primrose colour, of excellent form, and the calyces do not burst.

Messrs. SUTTON AND SONS, Reading, exhibited a fine new rose and white Brompton Stock, named *Sutton's Express*.

A pan of *Lithospermum Froebelij* was shown, we believe, by Miss WILLMOTT, although there

Wright, and Barbara were exceptionally fine and most of the spikes carried four blooms.

Silver-gilt Banksian Medals to Messrs. B. R. CANT AND SONS, Colchester, for Roses. The blooms were staged in imposing masses, notable varieties being *Duchess of Wellington*, *General MacArthur*, *Mme. Edouard Herriot*, *Sallie* and *Autumn Tints*. Messrs. R. WALLACE AND CO., Colchester, for hardy border flowers, *Eremuri* showing to great advantage at the back of the exhibit, notably the buff-coloured *E. Warci*, *E. Bungei pallidus*, with clear yellow blooms, and the new variety *Salmon Queen*.

Silver Flora Medals to Mr. G. W. MILLER, Wisbech, for hardy flowers in variety. Messrs. ALLWOOD BROS., Wivelsfield, for *Carnations* of the perpetual-flowering type, including the new fragrant *Bishton Wonder*, of pink tone with a flush of heliotrope. Messrs. BLACKMORE AND LANGDON, Bath, for *Delphiniums*—the finest exhibit of these flowers in the show. Mr. JAMES BOX, Haywards Heath, for a mass of *Delphiniums*, flanked on either side with fine *Paeonies*, and in front a row of *English Irises*

and a border of garden Pinks. Messrs. GODFREY AND SON, Exmouth, for varieties of Campanula Medium (Canterbury Bells) and Delphiniums. Messrs. KELWAY AND SON, Langport, for a table of Delphiniums, of such beautiful varieties as Dusky Monarch, Lovely, Lady C. Legge, The Czar, General Baden-Powell, Lemberg and Geraldine Kelway. Messrs. H. B. MAY AND SONS, Edmonton, for miscellaneous indoor flowering plants. Messrs. WATERER, SONS AND CRISP, LTD., Twyford, for Roses and hardy flowers. This exhibit was finely arranged, each subject having plenty of space, so that the collection had a lightness and grace that was very pleasing. In the centre was a pool with varieties of Water Lilies, and grouped about these were bog-loving plants. Messrs. STUART LOW AND CO., Enfield, for

church, Hampshire, for hardy flowers. Forms of Campanula garganica were noteworthy, including Erinus, with lavender-blue flowers and hirsuta, white and blue. Mr. L. R. RUSSELL, Richmond, for varieties of large-flowered Clematis, ornamental Vines, and Erythrina cristagalli; Messrs. B. LADHAMS, LTD., Shirley, Southampton, for garden Pinks and other hardy flowers.

Bronze Flora Medal to A. FERGUSON, Esq., The Hollies, Weybridge (gr. Mr. F. W. Smith), for Delphinium seedlings, of which Trevisco, dark-blue, Isonzo, blue and purple, Miss Marjorie Ferguson, opal-blue with dark processes, and Bukovina, clear pale-blue, are a selection.

Bronze Banksian Medals to Messrs. G. BUNYARD AND CO., LTD., Maidstone, for hardy border flowers and varieties of Philadelphus coronata.



FIG. 5.—ROSE QUEEN ALEXANDRA.

Awarded the National Rose Society's Certificate of Merit on Tuesday last (see p. 13).

Roses and Carnations; and Messrs. J. CARTER AND CO., Raynes Park, for varieties of Iris Niphon (English Irises). This was a charming group, and the varieties included fine spikes of L. Adorable, with wide falls blotched with amaranth colour; Lord Derby, dark blue; Cicero, purple; Mont Blanc, and Gladstone, pale blue.

Silver Banksian Medals to Messrs. BARR AND SONS, King Street, Covent Garden, for hardy flowers in variety; Messrs. W. AND J. BROWN, Peterborough, for Roses; Messrs. G. AND A. CLARK, LTD., Dover, for hardy flowers; Messrs. PAUL AND SON, Cheshunt, for ornamental trees and Roses. Lonicera Hildebrandtii was finely in flower, and the Roses included the new Paul's Lemon Pillar (Maréchal Niel × Frau Karl Druschki), a strong-growing fragrant Pillar variety, with leathery foliage. Messrs. R. H. BATH, LTD., Wisbech, for hardy border flowers, including numerous fine Paeonies and Delphiniums; Mr. MAURICE PRICHARD, Christ-

rius. Iris gigantea and the beautiful double, dark-blue Delphinium Harry Smitham attracted special notice; Messrs. J. PEED AND SON, West Norwood, for a well-flowered batch of Gloxinias; Messrs. J. PIPER AND SONS, Bayswater, for hardy flowers; Mr. G. REUTHE, Keston, Kent, for shrubs, hardy flowers and Alpines; Messrs. T. S. WARE, LTD., Feltham, for a well-arranged corner group of hardy flowers; Messrs. YOUNG AND CO., Cheltenham, for perpetual-flowering Carnations; and Messrs. S. BIDE AND SONS, LTD., Farnham, for Sweet Peas.

TRIAL OF PYRETHRUMS.

The Floral Committee has recommended the following awards to varieties of Pyrethrums grown under trial in the Wisley Gardens:—

Highly Commended.—Langport Scarlet, KELWAY; Snow White, KELWAY; Firefly, KELWAY; Punch, FORBES, KELWAY; Roseum, FORBES; and fulgens plenissimum, FORBES.

Commended.—Souce, KELWAY; J. M. Twerdy, KELWAY; General Gaselee, FORBES, KELWAY; Record, FORBES; Queen of Whites, FORBES, KELWAY; Eglantine, FORBES; Aphrodite, FORBES; Andromeda, FORBES; Boccace, FORBES; Ernest, FORBES; Gem, FORBES; Samranburgh, FORBES; and Le Dante, KELWAY.

Orchid Committee.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., showed a selection of Orchids, including Brasso-Cattleya Princess Elizabeth, Cattleya Mendelii albens, C. Mossiae Wageneri Fowler's variety and Odontoglossum Ceres Fowler's variety.

SIR JEREMIAH COLMAN, Bart., Gattton Park (gr. Mr. Collier) showed varieties of Odontioda Papilio, the dark-coloured Oda. Margaret; Laelio-Cattleya Canhamiana alba; Cattleya Mendelii Lady Colman, a clear white variety with bluish-lilac front to the lip; and Epidendrum fragracarpum (fragrans × prismatocarpum), an interesting cross, with flowers near to E. fragrans.

WILLIAM THOMPSON, Esq., Walton Grange, Stone (gr. Mr. J. Howes), was awarded a Silver Banksian Medal for some very fine hybrid Odontoglossums.

Messrs. STUART LOW AND CO., Jarvisbrooke, were awarded a Silver Banksian Medal for a good group.

R. G. THWAITES, Esq., Streatham (gr. Mr. Hannington) staged a selection of showy and interesting Orchids, including several white Cattleyas.

Messrs. FLORY AND BLACK, Slough, showed a very fine form of Laelio-Cattleya Canhamiana alba, with pure-white sepals and petals and dark ruby-purple lip.

MESSRS. SANDER AND SONS, St. Albans, showed Laelio-Cattleya Gottoiana Imperator, a very large flower of fine shape, and with a very dark lip. The spike bore five flowers.

Fruit and Vegetable Committee.

Present: Mr. A. H. Pearson (in the chair), Messrs. W. Bates, A. W. Metcalfe, A. R. Allan, Horace Wright, A. Bullock, E. A. Bunyard, Owen Thomas, W. Poupert, Edwin Beckett and A. Grubb.

Messrs. GEO. BUNYARD AND CO., LTD., Maidstone, exhibited Cherries Giant Hedelfinger, a big, black fruit, not quite ripe; Schrecken, a beautiful black variety; Old Black Heart; Werder's Early Black, Governor Wood and Ludwig's Biggareau.

Mr. JAMES HUDSON exhibited ripe fruits of a seedling Cherry raised from a stone planted about ten years ago in the gardens at Gunnersbury House, Acton. The tree is growing in the top of an old cast-iron pump in the open. The variety bears a great resemblance to Governor Wood, and is of agreeable flavour. In 1912 the fruits were ripe out-of-doors on May 31, and this season about the middle of June.

Mr. P. W. COUSINS, The Nurseries, Stanwick, Hertfordshire, showed baskets, as packed for market, of Strawberries Hibbert's King George and Reliance. Both varieties were of conical shape and firm of flesh, so that they had travelled well. Reliance was the better flavoured variety.

Mr. S. MORTIMER, Rowledge, Farnham, exhibited a new variety of Cucumber named Mortimer's Rival. The fruit is large, straight, and does not taper at the stalk end to form a "handle." The exhibitor was asked to submit the variety for trial at the Wisley gardens.

NATIONAL ROSE.

JUNE 29.—The great metropolitan show of the National Rose Society was held on Tuesday last in the Royal Botanic Gardens, Regent's Park. The event will rank as one of the greatest floral successes of the year, and the results fully justified the decision of the Council to hold the exhibition as usual. It was a glorious day—typical "Rose" weather—and the new arrangement of holding the show mainly in one large, canvas-covered structure enabled visitors to make their inspection in comfort. Queen Alexandra was an early visitor, Miss Willmott acting as guide, and King Manoel and Queen Amelie were also present.

As usual, the new Roses were staged in a special tent, which was thronged with visitors, those waiting their turn to enter forming a long queue. Two Gold Medals were awarded to novelties and eleven varieties received Certificates of Merit.

AWARDS.

GOLD MEDAL ROSES.

Paul's Scarlet Climber.—This is the brilliant variety which attracted so much notice at the R.H.S. Summer Show at Chelsea, although it was not in quite so good condition. (See *Gard. Chron.*, May 29, 1915, fig. 96.) Shown by Messrs. W. PAUL AND SON.

Lemon Pillar (*Frau Karl Druschki* × *Maréchal Niel*).—A fine bush Rose, being almost as vigorous as the first-named parent. From the other parent it derives a delicate yellow tint in the centre and a sweet perfume. The flowers are of large size and exquisite form. Exhibited by Messrs. G. PAUL AND SON.

CERTIFICATES OF MERIT.

Lady Bowater (see fig. 6).—This variety was raised from *Frau Karl Druschki* and *Pharisaër*. It is a free, erect grower, producing well-formed blooms of the Bessie Brown type, but without the faults which characterise this popular exhibition variety. The tone is a delicate blush-shaded apricot in the bud.

Cherry Page.—A semi-double, H.T. variety, coloured soft, rosy pink, with gold at the base of the petals. The unopened buds are very charming in colour and form. The plant is a vigorous grower and free bloomer; last summer we inspected a row in the exhibitor's nursery, and formed a high opinion of it as a garden variety. Both these shown by Mr. WALTER EASLEA, Eastwood, Essex.

Queen Alexandra (H.T.) (see fig. 5).—A dwarf, decorative, single variety of the perpetual-flowering type, of pale-lemon colour, with cluster of golden stamens, the petals tipped with blush colour. Shown by Rev. J. H. PEMBERTON.

Sallie (H.T.).—A vigorous bush variety. In the specimens exhibited the outer petals showed injury by the weather, but the centres were a delightful filbert-shape, the petals being a delicate pink with gold colour at the base, throwing a sheen of apricot on the bloom.

Florence Spaul (H.T.).—A large pink variety possessing a delicate fragrance. It is a good full Rose of perfect form.

Cupid.—A single variety of golden-apricot colour, which received the R.H.S. Award of Merit on the 22nd ult. (see p. 360). These three varieties exhibited by Messrs. B. R. CANT AND SONS.

Flame of Fire (H.T.).—A small, but very pretty, bloom, delightful in the bud stage, with long, pointed centres, the unfolding petals coloured apricot suffused with orange, which lightens with age. The stems carry stiff, green foliage. Shown by Messrs. S. MCGREDY AND SON.

Prince Charming.—A free-growing H.T. variety, bearing small, coppery-pink blooms. The red stems and deep green, glossy leaves add to its attractiveness. Shown by Messrs. HUGH DICKSON, LTD.

Joanna Bridge (H.T.).—A dwarf, single variety, the blooms opening a pale lemon-yellow, the buds tinged with apricot-orange and blotched with rose. The foliage is pretty, with red stems. Shown by Mr. E. J. HICKS.

Queen of Fragrance.—A pink variety possessing a very sweet fragrance. This variety won the "Clay" Cup at the R.H.S. Holland House Show, 1914, offered for the most fragrant new Rose.

Titania.—A China Tea variety. The semi-double blooms are coloured apricot and orange, the petals being paler at the base. Both these exhibited by Messrs. WM. PAUL AND SON.

PREMIER BLOOMS.

Nurserymen.—H.P., Coronation (B. R. CANT AND SONS); H.T., Lady Barham (D. PRIOR AND SON); T., Mrs. Foley Hobbs (HUGH DICKSON, LTD.).

Amateurs.—H.P., Gloire de Chédane Guinois-seau (S. W. BURGESS); H.T., George Dickson

(E. JACKSON); T., Madame Jules Gravereaux (Dr. W. P. PANCKRIDGE).

GROUPS.

There were two exhibits in the class for a representative group of Roses staged on the floor, including plants and cut blooms, with Ferns, grasses and other suitable foliage plants. The 1st prize was won by Messrs. HOBBIES, LTD., Dereham, Norfolk, for a delightful arrangement in which tall, weeping standards were effectively employed. A pergola, by no means intrusive, was introduced at either end. The 2nd prize

pots; 2nd, Messrs. STUART LOW AND CO., Enfield, whose group was less dense.

Messrs. G. JACKMAN AND SON, Woking, excelled in the smaller class for a group occupying 20 feet by 3 feet; and Messrs. B. R. CANT were placed 2nd, this firm featuring the new single variety Cupid, which received the R.H.S. Award of Merit on the 22nd ult.

BLOOMS SHOWN ON BOARDS.

The Championship Class for 72 blooms, distinct, attracted five competitors. Messrs. B. R. CANT AND SONS, Colchester, whose exhibits have met with such success at



FIG. 6.—ROSE LADY BOWATER.

Awarded the National Rose Society's Certificate of Merit on Tuesday last.

was awarded to Messrs. W. PAUL AND SON, Waltham Cross, who relied more on high quality blooms of the larger varieties, these being staged in baskets and vases, with a few Ramblers as foils.

The groups of cut blooms arranged on tabling appeared as great banks or hedges of Roses, each being an assemblage of the most popular varieties, with specialities of the firms in conspicuous places. The first prize for a representative group occupying a space of 33ft. by 3ft. was won by Messrs. W. AND J. BROWN, Peterborough, who utilised tall sprays of Ramblers as a background, with big epergnes of cut blooms rising from a bed of Roses in vases and

Rose shows this season, won the Challenge Trophy and Gold Medal with blooms of sterling merit, and included the champion bloom in the Nurserymen's Classes (other than Hybrid Tea, Tea, or Noisette varieties) in a superb specimen of the pale pink Coronation variety. Other notable blooms were: St. Helena, Geo. Dickson, Mrs. Wallace Rowe, Ulrich Brunner, J. B. Clark, Augustus Hartmann, Lady Barham, Claudius, H. E. Richardson, Alice Lemon, Frau Margarete Moller, Geo. C. Wand, Mme. Jules Grolez, White Maman Cochet, Edward Mawley, May Kenyon Slaney, Mrs. W. J. Grant, Mildred Grant, Lieutenant Chauré, Mabel Drew, Dean Hole, Earl of Gosford, Mrs. Geo. Norwood, O.

TEA AND NOISSETTE VARIETIES

Terks, H. V. Machin and Florence Spaul. 2nd, Messrs. FRANK CANT AND CO., Colchester, for an exhibit not so uniformly good as the 1st prize lot, although the majority of the flowers were of the best exhibition quality. A selection includes: William Shean, Duchess of Normandy, Mrs. J. H. Welch, Geo. Dickson, Mamie, Sunburst, Jonkheer J. L. Mock, Avoca, Mme. Jules Graveureaux, Ethel Malcolm, Gloire de Chédane Guinoisseau, Albatross and Coronation. 3rd, Messrs. D. PRIOR AND SON, Colchester, who showed the best bloom of a Hybrid Tea variety in a magnificent flower of Lady Barham; 4th, Messrs. A. DICKSON AND SONS, Newtownards.

In the class for 48 blooms, distinct, the China Challenge Trophy is included in the 1st prize. It was won by Messrs. HUGH DICKSON, LTP., Belfast, in a competition of seven. The collection represented high quality, and late in the day the blooms had retained their fine shape and appeared as fresh and bright as could be wished. The outstanding feature was a bloom of Mrs. Foley Hobbs of gargantuan proportions, but retaining the elegance of form and general grace that characterise this beautiful pale-lemon coloured Tea variety. It was awarded the Silver Medal offered for the best Tea or Noisette variety in the Nurserymen's Classes. Other choice flowers were: Mrs. Edward Mawley, Mildred Grant, Hugh Dickson, Bessie Brown, Lady Ashtown, Yvonne Vacherot, Brilliant, Sunburst, Mrs. W. J. Grant, J. B. Clark, Gorgeous, Joseph Hill and Mrs. Hugh Dickson. 2nd, Mr. H. RICHARD, Warsach, Hampshire. Some of the flowers were exceptionally large and all were good. Mrs. A. Carnegie, Mrs. Joseph Welch, Edward Mawley, Mildred Grant, Snow Queen, J. L. Mock, Coronation and Mme. Jules Graveureaux were the best. 3rd, Mr. GEO. LONGLEY, Rainham, Kent.

There were five exhibits in the class for 40 varieties shown in triplets. Each collection required five large boxes, so that twenty-five boxes in all were staged—an imposing mass of the choicest flowers, for all the exhibitors showed well. Messrs. B. R. CANT AND SONS were again to the fore, excelling all others easily with blooms that left little room for criticism, but much to enthuse on. Very fine were St. Helena, Lohengrin, Elizabeth, Lady Ashtown, Lady Helen Vincent, H. V. Machin, Mme. Jules Graveureaux, British Queen, Lieutenant Chauré, Killarney, Yvonne Vacherot, Mrs. A. Hammond, Mabel Drew, Mrs. W. J. Grant, Dean Hole, and Leslie Holland. The 2nd prize was won by Messrs. ALEX. DICKSON AND SONS, LTD., who showed the paler varieties more numerous, although there was a glorious trio of the beautiful new H. V. Machin, of intense rose colour with scarlet sheen. Behind these were superb specimens of Mildred Grant. Others especially good were: Jonkheer J. L. Mock, Mrs. J. Campbell Hall, Mrs. Geo. Shawyer, Lady Barham, Geo. W. Waud, Lady Ashtown, Florence Pemberton and Lady Greenall. 3rd, Messrs. F. CANT AND CO.; 4th, Messrs. D. PRIOR AND SON, Colchester.

Only three exhibits were forthcoming in the class for 24 varieties shown in triplets, in which Messrs. G. AND W. BURCH, Peterborough, excelled. The 2nd prize was awarded to Messrs. J. BURRELL AND CO., Cambridge; and the 3rd to Mr. JOHN PIGE, Royston, Hertfordshire. The 1st prize collection contained blooms of more than average merit, and won easily. A selection of the varieties includes: H. A. Moore, Margaret, Mrs. Geo. Shawyer, Mrs. Joseph Welch, Mrs. Roosevelt, William Shean and Dean Hole.

In the smaller Nurserymen's Classes for 24 blooms distinct, Mr. H. DREW, Longworth, Berkshire, showed best of eight, and Mr. W. R. HAMMOND, Burgess Hill, Sussex, was 2nd, with Mr. JOHN MATTOCK, Headington, 3rd. This was a good class throughout, and not many points separated the three prize collections. In the premier exhibit there were choice blooms of H. V. Machin, Bessie Brown, Dean Hole, Edward Mawley, Mildred Grant, Ulrich Brunner, Lieutenant Chauré, Mrs. Roosevelt, and William Shean.

For twelve varieties shown in triplets, Mr. HENRY DREW, Longworth, excelled, followed by Mr. JOHN MATTOCK, with Messrs. CHAPLIN BROS., Waltham Cross, 3rd.

The D'Ombra Challenge Cup was offered for 24 blooms, distinct, and of five exhibits two were outstandingly good—from Mr. GEO. PRINCE and Mr. H. DREW respectively. Mr. PRINCE, however, had no difficulty in securing the premier prize with choice blooms of these refined Roses. His specimens of Countess de Nadaillac, Mrs. E. Mawley, Mme. J. Graveureaux, Mrs. Campbell Hall, Mme. E. Sablayrolles, Golden Gate, Maman Cochet, Niphotos, Mrs. Foley Hobbs, Alex. Hill Gray, Souvenir de S. A. Prince, Mrs. Kennedy, Maréchal Niel, W. R. Smith and Mme. C. Soupert were all excellent. Mr. Drew showed Mme. Jules Graveureaux, Cleopatra, Molly Sharman Crawford, White Maman Cochet, Mme. Constant Soupert, Nita Weldon, Mrs. Myles Kennedy and others.

In the smaller class for 12 blooms there were five exhibits. The best was shown by Mr. JOHN MATTOCK; 2nd, Mr. H. RICHARDS, Warsach.

For 16 varieties, shown in triplets, the 1st prize was awarded to Mr. G. PRINCE, Mr. H. DREW following.

BLOOMS SHOWN IN VASES.

The most important class was for 12 varieties (not to include more than six Tea or Noisette sorts). Each vase contained seven blooms. Messrs. D. PRIOR AND SON had the field all to themselves, and their exhibit was worthy of the 1st prize, Dean Hole, Ethel Malcolm, General MacArthur, Caroline Testout, Lyon and Leslie Holland being a selection of the varieties.

There was better competition in the class for nine varieties, in which four entered, and Messrs. PRIOR again excelled with imposing vases of choice blooms, the specimens of Mme. Jules Graveureaux and Mme. Constance Soupert being highly meritorious. 2nd, Mr. GEO. PRINCE, whose collection suffered by the use of shorter vases, although the blooms were splendid; 3rd, Mr. JOHN MATTOCK.

The class for 18 varieties of decorative Roses in vases was a great success, and the whole of a long table was utilised to stage the collections, of which there were six. The 1st prize was won by Messrs. D. PRIOR AND SON with blooms at the best decorative stage. The delicate apricot shade of Lady Hillingdon was remarked, whilst the varieties Mrs. C. Russell, Mrs. W. J. Grant, Melanie Soupert, General MacArthur, Ethel Malcolm and Mme. Ravary also deserve mention; 2nd, Messrs. CHAPLIN BROS.; 3rd, Mr. GEO. LONGLEY, Rainham, Kent.

PERPETUAL FLOWERING DECORATIVE ROSES.

The blooms of this type, shown in baskets, were one of the features in the large tent. A basket of Roses never fails to please. It affords, moreover, an excellent opportunity of judging the merits of a variety, for in the mass the good points are easily discerned, as there are generally blooms in all stages.

In the class for nine baskets no fewer than seven competed. Messrs. HUGH DICKSON won the 1st prize for the third time in succession, and thus secured the Kilbee-Stuart Challenge Cup finally. The exhibit was a magnificent display of such sorts as Lyon, Lady Pirrie, Mrs. George Shawyer, Mrs. David McKee, Mme. Melanie Soupert and Lady Ashtown; 2nd, Messrs. CHAPLIN BROS.; 3rd, Mr. JOHN MATTOCK, whose blooms were amongst the freshest at the close of the show.

For five baskets there was a good competition amongst eight. Mr. Walter EASLEE, Danecroft Nursery, Leigh, Essex, and Mr. GEO. PRINCE were adjudged equal firsts. Both showed splendidly, their flowers being delightfully arranged, so as to appear light and graceful. Mr. EASLEE had big masses of Mme. Ed. Herriot, Château de Clos Vougeot, Louise Catherine Breslau, and Mrs. Herbert Stevens; Mr. PRINCE had Mrs. H. Stevens, Richmond, Lady Pirrie, Gen. MacArthur, Lady Hillingdon and Richmond; 3rd, Mr. H. Drew.

DECORATIVE ROSES.

The largest displays were found in this section. The groups were arranged around the outskirts flat against the tenting, rising on tiers generally with velvet cloth ground. The "A. C.

Turner" Cup was offered for 36 distinct varieties. It was won by Mr. JOHN MATTOCK, whose skilful colour-grouping told, with fine quality. Messrs. FRANK CANT AND CO. were placed 2nd.

Seven competed in the class for 12 varieties, in which Mr. FRANK SPOONER, Horsell, Woking, won easily, followed by Mr. CHAS. TURNER, Slough. In the remaining classes of this section the prizes were awarded as follows:—(a) *Nine distinct varieties of new decorative Roses*: 1st, Mr. C. TURNER, Slough, with Mme. Edouard Herriot, Mme. Charles Lutard, Pearl, a pretty single, bunch variety, Queen of the Musks and Old Gold; 2nd, Mr. E. J. HICKS. 12 *distinct varieties of dwarf Polyantha Roses*: 1st, Mr. E. J. HICKS; 2nd, Mr. GEO. PRINCE; and these exhibitors were also 1st and 2nd respectively in the class for 12 *distinct varieties of Polyantha Roses*.

The best exhibit of 24 blooms in two varieties, white and crimson, was shown by Messrs. B. R. CANT AND SONS, who staged Edward Mawley and Mrs. Andrew Carnegie in alternate rows.

The new, fragrant pink variety, Mrs. George Norwood, exhibited by Mr. ELISHA J. HICKS, was adjudged the best exhibit in the class for 18 blooms of a variety other than H.P., Tea, or Noisette.

Mr. J. MATTOCK showed the best basket of a Tea or Noisette variety in Mrs. Foley Hobbs, whilst Messrs. STUART LOW AND CO., in Mme. Edouard Herriot, had the best basket of a Pernet variety. The best nine blooms of any new Rose were shown by Messrs. B. R. CANT AND SONS, the variety being Augustus Hartmann.

AMATEURS' CLASSES.

The schedule made liberal provision for amateur exhibitors; indeed, the amateur classes were much more numerous than in the nurserymen's section, the numbers being 71 and 37 respectively. All sections of growers were catered for, from those who have an unlimited number of plants to those with 3,000, 2,000, 1,000, and so on, down to those with only 100.

Chief interest centred in the open class for 36 blooms, distinct, for which the "blue ribbon" of the amateur section was offered—the Champion trophy and Gold Medal. We missed the old-time champions, such as Lindsell, Pemberton and Conway-Jones, and a champion was found in Mr. H. L. WETTERN, Sandstead. Last year's winner, Dr. PALLETT, was 2nd, and Mr. F. DENNISON, who was champion in 1913, 3rd. Mr. WETTERN's blooms were of glorious quality, and especially the varieties Mildred Grant, Amy Holland, G. Dick, Mrs. Joseph Welch, Mrs. G. Norwood, Mrs. Foley Hobbs, Molly Sharman Crawford, Mme. Jules Graveureaux, H. V. Machin, Lady Alice Stanley, F. C. Seton and Bessie Brown.

Dr. PALLETT's best blooms were White Maman Cochet, Mrs. J. H. Welch, Mrs. T. Roosevelt, Dean Hole, Mme. Jules Graveureaux and Edward Mawley.

Mr. WETTERN also beat five others in the important class for 24 blooms, distinct, with Avoca, Dean Hole, Richmond, Margaret, Augustus Hartmann, Liberty, Lady Alice Stanley and others. Dr. PALLETT again followed, and Mr. G. A. HAMMOND, Burgess Hill, was awarded the third prize.

The open class for 12 varieties, distinct, in triplets, was a poor one, Mr. DENNISON, Leamington Spa, having the better of two exhibits. Some of the flowers, such as George Dickson, Mrs. Andrew Carnegie, Mildred Grant, Lady Ashtown, Bessie Brown and William Shean were of good exhibition quality; 2nd, Mr. CONWAY-JONES, Hucklecote, Gloucester.

A beautiful box of Mildred Grant in the class for 12 blooms of any variety except a Tea or Noisette, shown by Dr. PALLETT, was placed first, and Mr. W. O. TIMES won with the same variety in the similar class for 12 blooms open only to growers of fewer than 3,000 plants. This gentleman won the "Hobbies" Cup in the class for 24 blooms, distinct.

Capt. W. J. THORPE, Hucklecote, excelled in the class for 24 blooms for growers of fewer than 2,000 plants. He won easily with superb blooms of Mrs. A. Carnegie, Mildred Grant, Dean Hole, Koenigin Carola and Gladys Harkness; 2nd, Mr. G. R. BONNOR, Barnwood, Gloucestershire.

In this section Mr. D. DAVIES, Beaconsfield, showed Mrs. Andrew Carnegie splendidly in the class for 9 blooms of any variety other than a Tea or Neisette.

Mrs. R. de V. PRYOR, Hitchin, with even, well-matched blooms of Mme. Mélanie Soupert, Mme. Jules Graveureaux, Mrs. Andrew Carnegie, Mrs. J. H. Welch, William Shean and Mme. Wagram, was placed 1st for 18 blooms, distinct, followed by Mr. P. T. DAVIS, Burgess Hill. Other 1st-prize winners in the amateurs' section were Mrs. H. BALFOUR, Messrs. W. J. THORPE, D. H. DAVIES, Dr. C. LAMPLUGH, Mr. E. B. LEHMANN, Rev. F. R. BURNSIDE, Dr. W. P. PANCKRIDGE, Messrs. A. E. PROTHEROE, W. MOORE, A. BRICE and R. METHVEN.

METROPOLITAN CLASSES.

These comprised three; two were for growers residing within eight miles of Charing Cross and one for exhibitors within a ten miles' radius. Mr. RAMON DE ESCOFET, Dulwich, who excelled in the similar class at the London Rose Show, was awarded the 1st prize for 6 blooms, distinct, in the eight miles section, and Mr. A. W. ATKINSON, Palmers Green, the 1st prize for 6 blooms, distinct, in the larger area competition.

DECORATIVE CLASSES.

The special tent devoted to these classes attracted a great number of visitors. Although the entries were not so numerous as in recent years, the classes generally were well contested.

In the open class for a decorated dinner table the 1st prize was won by Mr. ELISHA J. HICKS with a brilliant arrangement of Princess Mary. Mrs. F. M. BRADLEY, Peterborough, who was awarded the 2nd prize, used Old Gold with good effect. Miss CHAPLIN, Waltham Cross, who was third, won the 1st prize in the open class for bowls of Roses with a graceful arrangement. Mrs. A. BIDE, Farnham, and Mr. ELISHA HICKS were placed equal 2nd.

In the Amateurs' Classes there was a good competition, with dinner-table decorations, where only the single-flowered varieties were to be used. Miss OAKLEY-FISHER, Sudbury, Harrow, had a delightful table of Irish Fireflame, and won the 1st prize; had Mrs. ALEX. ROBINSON used fewer vases she would probably have been the most successful, but had to be content with the 2nd prize; she decorated her table with Irish Elegance; Mrs. ALLEN HOPE, Addlestone, associated Irish Elegance with Pink Pearl. In the class for any varieties other than singles, Miss J. B. LONGTON, Hendon, made a particularly successful use of Mme. M. Soupert, Gustave Regis and Joseph Hill Roses with shoots of pale green foliage.

The varieties of exhibition Roses were of the average merit, and here the 1st prize was won by Mrs. A. E. BROWN, Reigate, but the exhibits in the class for garden Roses were much more attractive. Mrs. A. ROBINSON had a particularly graceful first-prize bowl.

CITY OF LONDON ROSE.

JUNE 24.—The City man has a great love for flowers of all kinds, and particularly for the Rose. During a great part of his daily journey to and from his place of business, especially during the spring and summer, the garden forms one of the chief topics of his conversation, and his knowledge of horticulture might well surprise those of his acquaintances who know him only as a keen man of business. It is, perhaps, because the Rose is a good "town-flower" that it claims so large a share of his attention. Then, it makes a good button-hole flower, a quality which strongly appeals to the amateur grower, who likes to be able in this handy fashion to exhibit the results of his skill as a cultivator. It is interesting to look down the list of members of the City of London Rose Society. There are to be found the names of some of the hardest workers and keenest business men in the City—men on 'Change, men from the Baltic, Lloyd's, Mincing Lane, Lombard Street, and other centres of thronging industry. Only *bona-fide* City workers are eligible for membership. The society is now three years old, and the progress it has made during this short time is most gratifying. Those who visited the annual exhibition

of the society on Thursday in last week would find it difficult to believe that so well-established an organisation could have had so short a life. The keen interest which every member of the society has taken in its welfare has been an important contributory cause of success. Then, during the three years of its existence, each succeeding Lord Mayor has been its president, while other influential patrons figure in the list of vice-presidents. Numerous trophies and money prizes have been presented for competition. The open classes prove an attraction to the most important trade firms in the country. This year the well-known firms of B. R. Cant and Sons, R. Harkness and Co., Chaplin Bros., Frank Cant and Co., Geo. Prince, D. Prior and Sons, Alex. Dickson and Sons, W. and J. Brown, Elisha J. Hicks, and W. R. Hammond figure in the prize lists. It is, however, only to be expected that in an essentially amateur exhibition, the chief interest should centre round the purely amateur groups, and this proved to be the case. It may here be observed that the exhibition suffered somewhat from inadequate lighting. This can, perhaps, hardly be prevented in such a situation, but it is to be regretted, as the colours of the flowers appear different in artificial light, the yellows and pinks especially suffering from such conditions. There were 300 entries, and nearly 100 competitors.

NURSERYMEN.

In the open class for 48 blooms, Messrs. B. R. CANT AND SONS, R. HARKNESS AND CO., CHAPLIN BROS., ALEX. DICKSON AND SONS, F. CANT AND CO. and D. PRIOR AND SON competed. The first prize was awarded to Messrs. B. R. CANT AND SONS for a fine collection in which such varieties as Mabel Drew, Mrs. W. J. Grant, H. V. Machin, Abel Chatenay and Killarney were remarkable for their quality and size. The variety Killarney in this collection was awarded the medal offered for the best bloom shown in Classes 1 to 6. Messrs. R. HARKNESS AND CO. of Hitchin, were placed 2nd. They showed a very choice collection of blooms, including Mildred Grant, Mme. Mélanie Soupert, Geo. Dickson, and many others of outstanding merit. Messrs. CHAPLIN BROS., Waltham Cross, were awarded the 3rd prize.

In the second class for 12 varieties in triplets there were eight competitors, all of whom showed fine and noteworthy blooms. Messrs. B. R. CANT AND SONS were again successful in gaining the 1st prize, their blooms of Augustus Hartmann, Mrs. Geo. Shawyer, and St. Helena being especially fine. Messrs. D. PRIOR AND SON and Mr. W. R. HAMMOND were equal in the 2nd place, and Messrs. A. DICKSON AND SON and Messrs. R. HARKNESS AND SON were also bracketed, for the 3rd place. In the class for 18 blooms, distinct, Mr. GEO. PRINCE secured the premier award for an excellent box of flowers, all of outstanding merit. Some of the varieties included were Mme. Mélanie Soupert, Mrs. H. Taylor, Mrs. F. Hobbs and Frau Lella Rautenstrauch. Messrs. FRANK CANT AND CO. won the 2nd prize, and Messrs. D. PRIOR AND SON the 3rd. Class 6, for 12 exhibition blooms of new Roses, provided an interesting competition, and the six entrants showed many really meritorious flowers. Here, again, Mr. GEO. PRINCE gained the 1st prize for a magnificent exhibit, containing amongst other varieties King George, W. Cooper, British Queen and Mrs. Forde, the latter a well-shaped flower of pale colour, tipped with rose. Mr. E. J. HICKS was placed 2nd, and Messrs. B. R. CANT AND SONS and CHAPLIN BROS. were bracketed equal 3rd.

OPEN AMATEUR CLASSES.

The amateur classes called forth some very creditable exhibits, the quality being uniformly good, especially from districts fairly distant from the centre of the metropolis. Class 7 was for a collection of 24 blooms of distinct varieties, and the prize was a fine Challenge Cup together with 20s. in money. The 1st was won by H. J. WETTERN, Esq., Sanderstead, Surrey, his blooms of Avoca, Amy Hammond and Augustus Hartmann being particularly good; 2nd, G. C. SAWDAY, Esq., Weybridge, with a good, even collection. In the class for 12 blooms of distinct

varieties the Rev. F. R. BURNSIDE, of Great Stembidge, gained the 1st prize with a very good collection, and G. C. SAWDAY, Esq., came 2nd.

MEMBERS' CLASSES.

Class 9, for 12 blooms of distinct varieties, offered the opportunity of gaining the City of London Championship Trophy. The award fell to H. L. WETTERN, Esq. The same exhibitor also won the 1st prizes in classes (a) for six varieties in triplets, and (b) six blooms of one variety. The Metropolitan Classes provided some interesting exhibits, those from the inner suburbs showing how successfully careful treatment and the skilful selection of varieties can triumph over the natural disadvantages of murky air and confined space. There were two classes, one for growers residing within eight, and the other within five miles of the Royal Exchange. Mr. R. DE ESCOFET won the 1st prize in both classes. The best bloom in the members' classes was shown by Mr. ESCOFET (William Shean), for which the National Rose Society's Silver Medal was awarded to the exhibitor. The decorative classes and ladies' classes were well contested and produced some very beautiful exhibits. There were a few non-competitive exhibits from nurserymen, and Gold Medals for these were awarded to Mr. ELISHA J. HICKS, and to Mr. WALTER EASLEA.

LINNEAN.

JUNE 17.—A meeting of the Linnean Society was held on this date, the President (Prof. E. B. Poulton, F.R.S.) in the chair.

Miss E. R. SAUNDERS sent spikes of Foxglove, *Digitalis purpurea*, displaying various degrees of peloric variation, one spike from a plant bred to show peloria combined with heptandry.

Dr. G. B. LONGSTAFF also exhibited Foxglove flowers from his garden at Putney. In 1913 he had an unusual number of Foxgloves, and there were many abnormalities amongst them. Mrs. G. B. LONGSTAFF exhibited on June 5 of that year a fine specimen of synanthly, and two specimens with spirally twisted stems on June 19. In 1914 there was not such a large crop of Foxgloves, and but two malformations were noticed; two spikes bearing synanthous flowers, one pure white and one spotted. The seeds from these were saved, sown in a box, and raised in a frame. The seedlings were planted out in the early spring. About 65 plants were raised, which all flowered this (their first) season, producing about 70 spikes. Of these about 30 bore flowers of the normal red, or of a pale pink colour, the upper flowers tending to white. About 40 spikes bore white flowers, some spotted, others spotless. Two spikes with pink flowers exhibited synanthly, one withered prematurely, the other was white and dark spotted. About 14 other spikes had synanthous flowers, some pure white, some dark spotted. As the spikes had not all opened and the plants were planted closely, it was difficult to count with certainty.

Professor Dendy recalled the exhibition on June 16, 1910, by Mr. N. C. Macnamara, of Foxgloves grown by him at Chorley Wood, Herts, followed by a note on "Mutations in Foxglove Plants," read on November 16, 1911, and claimed Miss Saunders's plants as descendants of these Hertfordshire Foxgloves.

Dr. GEORGE HENDERSON sent for exhibition two sheets of dried specimens of *Calotropis procera*, which grows in dry ground in West and Central India; it produces a valuable fibre, the latex a sort of rubber, and the pods a cottony substance. The specimens had been furnished by Mr. Arthur Delaval Young, husband, C.S.I., late Commissioner of Sind, and the officers of the Forest Department of Sind. Besides the materials named, a fishing-net was shown, made from the fibre derived from the stem, stated to be one of the strongest known. Dr. Henderson suggested that this species might be profitably grown in the dry northern coast of Africa, and machinery applied to the preparation of the fibre, hitherto effected by hand.

Dr. G. B. Longstaff referred to the wide distribution of this species within the tropics.

Obituary.

W. KINGSTON.—We regret to record the death of Mr. W. Kingston, auctioneer, Bedford, which occurred on Thursday, June 10. Mr. Kingston was a keen amateur rosarian, and exhibited regularly at the National Rose Society's shows during the '90's and following years. He won the Graham Cup for an exhibit in the amateur classes.

JOHN MORRISON.—On Saturday, the 19th ult., there passed away one of the best-known and most esteemed members of the gardening profession in Ireland, in the person of Mr. John Morrison, who for the past thirty-nine years has been gardener, and for most of that period land steward, at Narrow Water, the seat of the late Captain Hall. He had spent the evening of the 19th ult. in the Public Park at Warrenpoint, in which he took a great interest, and, walking home, sat down on a grassy bank to rest. Here he was found some time afterwards, having passed peacefully away in the garden and amongst the flowers he loved so well. A Scotchman by birth, a gardener by instinct, the beautiful grounds over which he exercised supervision were full of examples of his practical ability, and he was ever ready to show visitors the many beauties of Narrow Water.

ANSWERS TO CORRESPONDENTS.

"There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self."—*Gardeners' Chronicle*, No. 1, Vol. I., January 2, 1841.

ABNORMAL FOXGLOVE: *H. W.* The "large, flat blossoms, $3\frac{1}{2}$ inches across" at the top of your spikes of Foxglove are not unusual (see report of Linnean Society, p. 15). The abnormal condition is known as peloria, and is simply the reversion of an irregular flower to the former regular condition. In some plants peloria is constant.

APPLES WITH BROWN SPOTS: *Caltha.* No brown rot is present; the rustiness is due to injury by insects when the fruit was quite young. The insect is the larva of a lady-bird, which is useful as it destroys green fly.

FAILURE WITH VINES AND FIG: *S. J.* You ask us to give the reason why your vines of Black Hamburg, eight years old, "hardly bear anything," and a Brown Turkey Fig in a Peach house has never fruited. The reason may be one of several; but which only a person acquainted with the treatment the plants had received, the manner in which they were planted, and the nature of the border could determine. Trouble at the roots is a general cause of failure with vines, and this is due to a wrongly constructed border. There are also such questions as stopping, pruning, watering and ventilating to consider, for error in either of these details may be responsible. Lift the Fig tree next autumn, and replant in a narrow border, using soil that is not excessively rich but contains lime rubble, such as old mortar. See that the roots are prevented from escaping into the ordinary soil, by the use of a retaining wall or wooden boundary.

FERN DYING: *H. B.* The failure of your plant of *Lygodium palmatum* must be due, as you suggest, to some external influence, for there is no trace of organic disease, and the treatment appears to be correct, seeing that the companion plant is thriving. You suspect that some deleterious material is responsible, which could only be determined by analysis, but we do not undertake to do this.

FERNS TURNING BROWN: *South Lawn.* The injury is caused by the Fern eelworm. Dust the stems of the plants, when damp, with flowers of sulphur to prevent the eelworms ascending and entering the leaves.

FLOWERING SHRUBS FOR A WATERLOGGED CLAY: *B. Llewellyn.* In addition to the flowering shrubs you mention, it may be well to plant *Berberis Aquifolium*, *B. stenophylla*, *For-sythias*, *Ceanothus* of sorts, *Amelanchier canadensis*, *Deutzia gracilis*, *D. crenata* fl. pl., *Philadelphus* in variety, and certain of the shrubby *Spiraeas*, such as *S. ariaefolia*, *S. Aitchisonii*, and *S. Lindleyana*. You will probably find that the majority of the subjects grown in the conditions you mention will gradually deteriorate after two or three years. It may prevent this if you plant each subject on a mound, so that the collar is raised above the level of the surrounding ground, for the stem just above the roots is the first part of the tree to suffer injury in soil containing an excess of moisture.

GISSELEIRE: *A. J. B., P. L., Calcutta.* In reply to your inquiry for news of Monsieur —, of the Belgian Colonial Ministry (Agricultural Department), we have information that he is alive, and is at present in Brussels. We shall probably hear of him again, in which case we may be able to put you in communication with him.

HYBRID TREES: *H. B.* The article on "The Artificial Production of Vigorous Trees," by Prof. Augustine Henry, of which a notice appeared in *Gard. Chron.*, June 5, p. 317, was published in the *Journal of the Department of Agriculture, Ireland*, for October, 1914 (Vol. XV., No. 1).

MELON PLANTS DISEASED: *J. G.* The plants are attacked by the fungus *Cercospora melonis*. Melon spot mould or blotch. Every diseased leaf should be burnt as soon as the malady is detected, treating the whole plant in the same manner if the attack is severe. Spray the plants at intervals of four days with a solution of liver of sulphur, 1 oz. in six gallons of water.

MELON PLANTS WITHOUT FEMALE FLOWERS: *W. R.* The lack of female flowers is probably the result of the plants having been grown in a high temperature, thereby developing a rapid and uninterrupted growth, without making the necessary lateral fruit-bearing shoots. Pinch the points out of the plants, and stop the laterals when they are twelve or fifteen inches in height. Keep the house cooler and drier, and pick off all the male flowers, except those required for impregnating the fruit-bearing flowers.

NAMES OF PLANTS: *W. H. H.* *Eccremocarpus* scaber, a climbing plant; native of Chili.—*R. F. F.* *Leptospermum bullatum*.—*J. O.* 1, *Nepeta Mussinii*; 2, *Ruta graveolens* (Rue); 3, *Tragopogon porrifolius*.—*H. E. C.* We do not recognise the varieties of Roses. Send them to a grower who specialises in these flowers.—*A. E. H.* 1, *Syringa Emodi* (Himalayan Lilac); 2, *Saxifraga trifurcata ceratophylla* (greyer leaved); 3, *S. trifurcata* (redder stems); 4, *Erigeron speciosus*; 5, *Erodium cheilanthifolium*.—*Cis.* *Orchis maculata*.—*W. R.* 1, *Lastrea patens*; 2, *Nephrodium molle corymbiferum*; 3, *Asplenium macrocarpum pictum*; 4, *Adiantum cuneatum Pacotii*; 5, *Lastrea lepida*; 6, *Adiantum tenerum*.—*W. B.* *Celsia cretica*.—*J. W.* *Zephyranthes carinata*.—*E. F.* 1, Specimen withered and flowers faded, probably a species of *Heuchera*; 2, *Tellima grandiflora*.—*J. M.* 1, *Phlomis fruticosa*; 2, *Enilobium angustifolium* (Willow Herb); 3, *Sidalcea candida*; 4, *Asperula* sp.; 5, *Saxifraga granulata*; 6, *Helianthemum vulgare* var.; 7, *Cistus purpureus*.—*W. A. Hudd.* *Manettia bicolor*.—*J. M.* 1, *Acer Negundo* variegata; 2, *Cistus villosus* var.; 3, *Buddleia globosa*; 4, *Spartium junceum*; 5, *Crataegus mollis*; 6, *Cistus hirsutus*; 7, *Veronica incisa*.—*V.* 1, specimen missing; 2, *Robinia hispida*; 3, *Cytisus capitatus*; 4, *Rubus nutkanus*; 5, *Cupressus macrocarpa lutea*; 6, *Cent-*

ranthus ruber (white var.); 8, *Baccharis patagonica*; 1, *Strelitzia Reginae*; 7, 9, and 10 are too scrappy to identify; adult foliage is as necessary as flowers to identify most plants.—*H. F. Zobel.* You have sent more than six specimens, which is contrary to our rules. 1, *Libocedrus decurrens*; 2, *Cupressus Lawsoniana*; 3, *C. L. var. juniperina*; 4, *C. L. var. densa* (nana); 5, *C. pisifera* var. *filifera*; 6, *C. nootkatensis*; 7, *Thuja orientalis* var. *aurea*; 8, *Cupressus obtusa*; 9 and 10, *Juniperus chinensis*; 11, *Cupressus thyoides* var. *leptoclada*; 12, *Juniperus chinensis* var. *albo-variegata*; 13, *Thuja plicata* (Lobbi); 14, *T. occidentalis*; 15, *Cupressus obtusa* var.; 16, *C. pisifera*; 17, *Tsuga canadensis*; 18 and 24, *Picea excelsa*; 19, *Abies Nordmanniana*; 20, *A. Veitchii*; 21, *A. nobilis*; 22, *A. grandis*; 23, *Picea alba*; 25, *Abies Pinsapo*. *Abies* (The Silver Firs) are distinguished by smooth stems marked with a circular scar when the leaves fall. The cones are upright, and the scales fall with the seeds, leaving the central axis erect. In *Picea* (The Spruce Firs) there is a projecting cushion at the base of the leaves, giving a roughened ribbed appearance to the stems. The cones are pendent, and the scales open to allow the seeds to fall, the empty cone remaining on the tree for some time afterwards.—*T. H. C.* 1, *Carpinus Betulus*; 2, *Quercus rubra*; 3, *Galium Mollugo*.—*J. W. A.* *Eviscia fulgida*, more commonly known in gardens as *Cyrtodeira fulgida*.—*W. H. C.* *Lycaste cruenta* and *Epidendrum selligerum*.—*F. L. G., Brighton.* *Spiraea ariaefolia*.—*W. T.* *Sempervivum calcaratum*.—*P. W. S.* *Robinia Pseudacacia* variety *inermis*.—*W. S., Salop.* *Spartium junceum* (Spanish Broom).—*Miss M. C.* *Ptelea trifoliata*.—*P. M. L.* *Rhinanthus Crista-galli*; the plant will grow out-of-doors under the protection of a warm wall.

PEAS DYING: *J. B.* The roots are injured by wireworm. If soot is worked into the soil it will be beneficial. It is wise to turn over the ground frequently so that insect-eating birds can get at the pest. Applications of unsalted lime, superphosphate, and salt are good as deterrents, but in bad attacks the most effective remedy is gas-lime. This substance is highly dangerous to subsequent crops, and when used as an insecticide upon cultivated land the greatest care must be exercised. Following an application of gas-lime the ground should be turned over and left for several weeks before any crop is planted upon it.

SHADING NECTARINES: *Foreman, Surrey.* The fruits of Nectarines require light shading from the sun from the time they have stoned until the fruit is ripe. As only a few of the fruits of the Cardinal Nectarine have split stones, they have probably been damaged by insects in the early stages of stone development.

VIRGINIA CREEPER DYING: *W. G.* There is no fungus present. The root is evidently old and worn out.

YOUNG APPLE TREE UNFRUITFUL: *F. N.* The blossoms you send are not affected with organic disease; they have dropped because of failure to set. This may be due to one or more causes. Sometimes young fruit trees do not bear until they are well established, when they crop satisfactorily. If the variety is self-sterile and there are no other Apple trees in the neighbourhood to supply pollen, the failure will be due to this cause. Young fruit trees often make gross shoots, which exhaust the energies of the plant at the expense of fruiting. In such cases top-pruning only causes numerous lateral growths to develop, and these also grow too thick and coarse to form fruiting wood. Such trees should be root-pruned or lifted in the autumn.

Communications Received.—*H. R. D.*—*E. B.*—*Dr. H. J. C.*—*W. H. C.*—*Miss E. W. L.*—*C. J. E.*—*A. J. B.*—*S. A. E.*—*M. G. N.*—*S. M. J.*—*J. P.*—*Caltha*—*X. Y. Z.*—*Dorset Gardener*—*A. N.*—*J. M.*—*G. C. B.*—*H. W.*—*Shrub C.*—*R.*—*Newbury*—*J. E.*—*C. E.*—*B.*—*Mlle. Y. T.*—*R.*—*O. W.*

THE

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MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

XVIII.—THE END OF THE SEASON.

AFEW days more and Purdom was off again for the North to see what the "boys" might have been doing for us on the Tibetan Alps during this unexpectedly long absence of ours. For we had come south ostensibly for six weeks; and it was now two months since we had left a couple of retainers with a roving commission on the northern ranges; now it was a question of making hurry if any of their deficiencies or failures were to be made good before the Alps were fast locked in winter. So off he went: I was left behind to finish off some odd jobs. The late second *Dipelta* I had to collect from its gorge, a certain tall and graceful *Lilac*, a beautiful *Eriogonum*, *Astilbe*, *Rodgersia aesculifolia*, and various other oddments. On the acropolis of the city, too, there were numbers of little *Felicia*-like *Asters* to pick and choose from, a feathery-leaved *Incarvillea* with lovely *Allamanda*-like flowers of citron-yellow, and an unusually small form or sub-species of the *Ensate Iris*, so universal over the loess lands of China. Above all, there was a very magnificent *Berberis* (? *B. Potaninii*), a dense thorny bush of five feet or so, with its long sprays set abundantly with loose clusters of oval, bloomy berries of so dazzling a blood colour that the whole mass became a blaze. This abounded especially upon a graveyard just outside the West Gate on a specially hot and arid slope. (This *Berberis* is a lowlander and a hot-ground plant, never ascending.) Further, having collected this, amid agonised howls excited

by its thorns, I found also on that incline ripe pods of what I call the lovely *Indigofera*—a tiny spreading bush of six inches high and a foot across, very stiff and intricate, with minute, delicate foliage and brilliant rose-pink flowers in pairs. As a rule *Indigofera* pods hang long in a green state, refusing (like *Berberis*) to ripen until the frost has touched them. Of this, at these hot levels, there was as yet no hope. But the very heat itself had here done the job: the pods were dry and splitting, and for happy hours I squatted about happily on the slope amid the great coffins, feeling rather a ghoul at intervals, when the circumambient air reminded me that those coffins were not empty.

And now at last came the sad moment of farewell. Little town of sunshine and warmth, little town more beautiful than any, tucked away so snugly at the end of the world beneath your mountain, little dear walled city of diamond waters and rich greenery, we met each other well, in a favourable hour for both, and I am held to you by chains of memory that will not snap, that only grow the stronger as I turn away sad eyes at last, and set my face for the fierce and frozen North. Good-bye, Ch'ung li'to; Good-bye, Ch'ung wait-to, I shall never, except in remembrance, set eyes on you again. Down the long river valley sorrowfully we rode, and up at last through the gap in the ranges for the vacant and ungenial North where missionaries once more are to be seen. On the way there were seeds to be collected—a beautiful stiff bush-*Clematis* of very bare and stony banks, with parslified foliage and myriads of half-pendulous, wide-open flowers like dark-eyed Maltese crosses of burnished gold; *Buddleia variabilis* in good form from one river-bed; great *Clematids* of white and yellow; and all the unnamed fry of striking fruit or colouring that might occur. The most precious treasure of all I quite despaired of: I had missed it on the way down, and now the seed must all be gone. This was an *Ophiopogon* (? *O. kansuensis*), which on certain cliff-ledges and fringes of rather dry, scant scrub sent up from mats of dark evergreen grass-like leaves little lovely spires of stars, in texture and colour like faintly, dawn-flushed ivory. These grassy leaves I had forgotten: it was Purdom reminded me of them, and to him I owe my joy, when suddenly sighting such a turf of sombre green upon a rock, I remembered his words and alighted, there, indeed, to find a few bloomy blue-black berries still lingering, after all, on the *Ophiopogon*.

Not less important were the *Leptodermids*. These are slight shrubs from arid and stony banks or cliffs of the arid region. One, inhabiting only the very driest rocks and slopes, is a thing of special grace, with wiry sprays of three or four feet, set with minutest *Myrtle*-like leaves, and bent beneath the weight, in August, of a terminal panicle of blossom like five-pointed stars of a rose-coloured Lilac. The other is a stouter, stiffer bush. *Privet*-like in leaf, and like a *Persian Lilac* in the thyrses of flower that appear in July. This species

does not descend to the torrid zone, but hugs precipitous stony banks amid light scrub in a cooler region. These, however, have beauty only in bloom, but none in fruit; the glory of that northward-running valley in November lay only at one point, where, sporadic amid the coppice, stood up the stiff bushes of a very wonderful *Crataegus*, whose aim is to combine the dazzling fruitage of *Cotoneaster angustifolia* with the stark, thorny angular habit and fine foliage of *Hippophaë rhamnoides*. But here the narrow leaves are dark and lustrous, the spiny lateral branches, straight, spur-like and unbending, set all along their length with clusters of the most blazing vermilion-scarlet berries.

Through these last trophies of the dying year I made my way successfully into the Northern Alps, now all rigid and brown and lifeless in the grip of winter. Here, for awhile, sick with the change from warmth and life to icy-cold and death (and, anyhow, I do not love this range as I do the Southerly ones), I lay ailing in the pitch-pine-panelled parlour of a Tibetan farm, till Purdom at last returned with his final harvest of treasures, and we were able to set off together across the barren hills, towards the humming Capital of the North. No more seeds now, no sign of life anywhere over the wide earth, no suggestion of any possibility that life can ever return again from the hard and dun-coloured uniformity of the frozen world. One by one the mountain ranges were crossed and left behind; the last was the great crest of the Lotus, round whose feet fell a mantle of Willows now in their nakedness, a rippling sea of every brilliant yellow from clearest amber to deepest orange. After this the country sank into the desolation of mere dead downs; I dined each day at Randalls' as I rode in my chair, and took no heed of anything happening elsewhere. At last we came into the valley of the Wide River: it was the Nile set down in Central Asia—a vast flat, alluvial plain, hedged in on either side by flat parallel walls of hills, dust-coloured and pale and pearly in the soft remorseless light of a winter day, so white and shallow and transfiguring. The journey was now like a dead soul's progress through a huge and empty kingdom of the dead. And so it continued still from day to silent day, until at last we dropped out of this void and inexorable death upon the buzzing activities of the Northern Capital. So here we come to rest, and here in the end our limbs and our packages are unfolded, and hence in good time shall our harvest be despatched, by the swift sound posts that carry them down to the ports, after that to meet what mercy Finland and Siberia afford, and the mine-strewn abysses of the desolated sea. Here I now sit to meditate and compile you these memories, in a wide-yarded house of many courts that I have chartered in the hope of a quiet and comfortable winter after all our stresses and storms, that I may do justice to this year of work, and in time, perhaps, put together for your patience (but anyhow for the help of the

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26, October 17 and 31, November 14 and 28, 1914, January 2, February 27, March 20, April 10 and 24, May 1, 15 and 29, June 12 and 19, and July 3, 1915.

R.H.S. and other intimate friends of my expedition) a full, detailed, and ordered catalogue of all my finds despatched, their habits, haunts, and looks, and likeliest of methods of cultivation, that readers may have a solid guide to my treasures than that afforded by these articles. For even though it be necessary to repeat much of the information here given, it will prove a convenience to have it definitely placed, and each species treated apart in its order. And so, for the moment, I close the book of this wonderful and terrible year; may next season bring to me a set of pleasures no less wonderful, and to all at home a peaceful and undivided heart to share my joys. Let all good gardeners give me their good wishes for the coming year, and so, in time, if all goes well, their gardens shall reap a due reward. *Reginald Farrer.*

Rose, which was raised by Mr. George Harrison, of New York, about 1830, and is believed to be a hybrid between the Scotch Rose and the Austrian Briar. It is a very hardy, free-growing and vigorous plant, and never fails to produce large crops of pale yellow, semi-double flowers. It was a very popular plant at one time in the northern states, and it is still found in most old-fashioned gardens.

One of the yellow-flowered Roses, *R. simplicifolia*, from Persia, is not hardy. Of the four species which are hardy here *Rosa Hugonis* from Western China is the earliest to bloom. In the Arboretum the flowers are larger than those of the other yellow-flowered species and the plants are more vigorous and flower more freely. Judging by the plants in the Arboretum which have been growing here for several years,

the Department of Agriculture seeds of this Rose gathered in China by its collector, Mr. F. N. Meyer. Both the single and double-flowered forms were raised from this seed and have flowered in the Arboretum this year. The flowers are larger than those of *R. Ecae* and bright clear yellow. These Roses appear to be perfectly at home in the Arboretum, but it is too soon to speak of their value in North American gardens. The single and the double-flowered varieties are much cultivated in the gardens of Peking. The last of the hardy yellow-flowered Roses, the so-called Austrian Briar, has suffered from too many names. Among others it has been called *R. eglanteria* and *R. lutea*, but its oldest name by which it must be known is *R. foetida*, an unfortunate name given to it because the flowers have a slight odour which some persons do not find pleasant. Although long known in gardens as the Austrian Briar, it is probably nowhere a native of Western Europe, but an inhabitant of the Crimea, the Caucasus, Persia, and probably Central Asia. It has handsome bright yellow flowers, and when it grows well is one of the most beautiful of all single-flowered Roses; but in this climate it does not always succeed and the plants are usually short-lived. It has never flowered better, perhaps, in the Arboretum than it has this year. The Copper Austrian Briar, which has the petals yellow on the outer surface and dark copper colour on the inner surface, is believed to be a variety of *R. foetida* (var. *bicolor*). In this climate this handsome plant is usually short-lived and is not a very satisfactory garden plant. There is a double-flowered variety of *R. foetida* in the collection (var. *persiana*), known as the Persian Yellow Rose. This plant was sent to England from Persia in 1838 and is sometimes cultivated in American gardens. The flowers are more beautiful than those of the Harrison Rose, but in this climate it does not grow so vigorously. *Bulletin of Popular Information, Arnold Arboretum, Vol I., No. 8 (New Series).*

"LES AMIS DES ROSES."

THE appearance of the April-May number of the journal of the French Society of Rosarians is a welcome sign that those Frenchmen whose age prevents their mobilisation have the fortitude to continue their daily occupations. The plate published with the journal is a coloured illustration of the new Rose Majestic, the hybrid Tea raised by Messrs. William Paul and Sons, of Waltham Cross.

ONE OF WORCESTERSHIRE'S BEAUTIFUL TREES.

MANY of those who use the road from Malvern to London slacken speed when passing through the picturesque little village of Spetchley, to admire the fine Yew which stands so majestically by the old church.

It is not so much remarkable for its size and age as many another Yew tree in the country, it is more for its natural beauty and fine position. The road through the village goes between high banks rising on each side some 25 feet above the roadway, and on these banks in season blossom Snowdrops, Violets, and Daffodils, followed by that prettiest of all the Wichuraiana Roses, the single white, with its tiny Myrtle-leaved foliage. There is no record of the Yew tree's planting, but it must have been planted by someone who had in view the fine position, and at the same time mindful that in future years the tree should not encroach upon the windows, for it stands between the church tower and the churchyard wicket, and the lower boughs fall like a gigantic curtain some 14 feet on to the roadway below. Tradition attributes its planting to Sir Robert Berkeley, who, with his friend Evelyn, introduced so many fine trees at Spetchley. *E. Willmott.*



FIG. 7.—THE SPETCHLEY YEW.

THE ROSARY.

YELLOW-FLOWERED ROSES.

AMONG wild Roses with yellow flowers in the Arnold Arboretum (U.S.A.) are a few hardy plants which are not often seen in American gardens. There are five species of single, yellow-flowered Roses which are found only in the region from the Caucasus to the Himalayas, in Central Asia and in Western and Northern China. Among all the Roses of North America, Europe (except the Caucasus), Siberia and Japan, there is not a wild, yellow-flowered Rose, although some varieties of the Scotch Rose, *R. spinosissima*, have flowers more or less tinged with yellow, like the variety *hispida*, which has been covered with pale yellow flowers in the Shrub Collection this year, and Harrison's Yellow

this will be a valuable garden plant for the northern states. The next species to flower here, *R. Ecae*, is a very spiny shrub with small leaves and pale yellow flowers not more than an inch in diameter. It is a native of Afghanistan, where it is common on dry mountain ridges, and of Samarkand, and although of some botanical interest it has little to recommend it as a garden plant in this region. In 1820 an English botanist found in a collection of Chinese drawings in London the picture of a double yellow Rose to which he gave the name of *R. xanthina*, and many years later the single-flowered form of this Rose was found growing wild in Mongolia by the French missionary David. English botanists have usually confused this Chinese Rose with *R. Ecae*, and it apparently had not been cultivated in the United States or Europe until 1908, when the Arboretum received from

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XXXV).

LES ASPERGES EN ANGLETERRE.

La saison des Asperges est finie. Les turions verts deviennent plus rares dans les étalages des marchands de légumes de Londres.

Il est étonnant que l'Asperge blanche telle qu'elle est appréciée au Continent est si peu connue en Angleterre. En 1912, lors de l'exposition internationale de Chelsea, beaucoup de visiteurs restaient ébahis devant la blancheur des turions présentés par des participants étrangers. Certains avaient peine à croire que c'étaient des Asperges! Il y a évidemment à tenir compte de ce détail lors des envois vers ce pays. Si l'on désire y introduire des Asperges, qu'on songe tout d'abord à adopter un procédé de culture analogue à celui des Anglais, car les produits tout à fait blancs ne se vendraient pas.

Les grosses Asperges françaises trouvent en Angleterre un débouché assuré grâce à leurs dimensions et à l'époque de leur arrivée au marché. Elles sont intermédiaires entre les Asperges blanches et les vertes, une partie seulement du turion étant exposée à l'air avant la récolte. Ces dernières se développent pour ainsi dire entièrement à l'air, tandis que les blanches sont cueillies avant que la tête sorte de terre.

Un coup d'œil dans les marchés permet de constater qu'il se produit en Angleterre énormément d'Asperges de qualité médiocre. A Covent Garden on met parfois en vente des turions tellement minces qu'il semble impossible de s'en débarrasser au Continent. On se demanderait parfois si le climat ou le sol des Îles Britanniques est si peu favorable à la production de l'Asperge ou encore si la compétence des producteurs est en défaut.

En France et en Belgique, l'Asperge est généralement cultivée en terrain sablonneux, mais néanmoins de nature essentiellement variée: tels par exemple les sables de Malines et les terres ferrugineuses du Hageland. Nous connaissons des champs d'Asperges dont les parties légères donnent des rendements manifestement plus élevés que celles de consistance plus forte; par contre, ailleurs des producteurs estiment que les terres plutôt fraîches peuvent donner de très bons résultats à condition d'adopter des procédés "ad hoc."

Il semble qu'en Angleterre, surtout dans le Worcestershire, on recherche avant tout des terres lourdes. Les sols légers seraient rejetés uniquement parce que les réserves d'eau sont épuisées trop rapidement. Aux environs de Cambridge cependant nous avons vu des plantations en terrain assez analogue à celui du Hageland belge. Les quantités de fumier employées sont assez fortes et souvent on les complète au moyen d'applications de suie.

Les plantations sont faites à peu de profondeur et souvent à trop faible distance. Certains producteurs même sèment directement en place. On recommande d'écarter les lignes de 3 pieds à 3½ pieds (environ un mètre) et de placer les plants à un pied, mais on trouve beaucoup de champs à lignes triples, dans lesquelles les plants ne se trouvent guère qu'à un pied en tous sens. La ligne double à écartement plus grand, avec sentier à l'emplacement de la troisième ligne, constitue une amélioration, insuffisante cependant pour assurer la production d'Asperges de qualité comme au Continent.

En vue d'assurer la coloration verte des Asperges, les souches sont très peu recouvertes au printemps: les turions sont à peu près entièrement sortis de terre lorsqu'on les cueille. La coupe se fait souvent à l'aide d'un couteau-scie

donnant une section hachée, irrégulière qui n'est pas de nature à augmenter la valeur commerciale du produit.

Les boteleurs ne semblent pas être connus en Angleterre. Les bottes sont faites très petites à l'aide de raphia, puis au moyen d'un osier elles sont réunies en une botte plus grande, de forme aplatie.

Il ne nous appartient pas de discuter la valeur relative, au point de vue culinaire, des Asperges blanches et vertes, mais nous le répétons, si l'on veut importer des produits en Angleterre, on doit avant tout tenir compte des goûts de la clientèle. Un autre reproche fait aux Asperges étrangères mises en vente à Londres est qu'elles ne sont pas droites, que les pointes sont recourbées. C'est le résultat naturel de la végétation qui continue de se manifester; la réduction des délais de transport peut y remédier dans une certaine mesure, et aussi, semble-t-il, la suppression du trempage d'usage général dans certains centres de production en vue de maintenir la fraîcheur du produit.

LA QUESTION DE L'OCCUPATION DES BELGES.

A LA suite de déclarations faites par le président du "War Refugees Committee" au sujet de la durée du séjour des réfugiés en Angleterre, M. L. Jacobs, conférencier horticole belge, actuellement aux Royal Nurseries, G. Bunyard, Ltd., Maidstone, soumet à lord Gladstone ses projet d'emploi dans l'horticulture de la main d'œuvre belge inoccupée. Nous résumons les passages les plus importants de sa lettre:

Je suis disposé à organiser et diriger gratuitement le travail pour des milliers de Belges, même sans profession, y compris des femmes et des enfants, en faisant de la culture maraîchère.

Je propose d'exploiter les cultures sur le pied des champs d'expériences officiels que nous avons organisés en Belgique. Après déduction des frais, les recettes seraient versées au Relief Committee pour soldats belges.

Dans chaque localité il conviendrait de désigner un Belge dont je ferais l'éducation horticole de façon à en faire un "foreman" ou "conducteur." Il serait probablement nécessaire, pendant cette formation, d'instituer une section flamande et une section française. Le temps requis ne serait pas long puisqu'ordinairement je prépare les candidats (comportant souvent des dames) pour l'obtention du certificat de capacité du gouvernement belge à Vilvorde (culture maraîchère ou arboriculture) en quinze leçons démonstratives et quelques répétitions et exercices pratiques*. Les "foremen" seraient, en tout cas, formés pour le printemps prochain. A la même époque, les plants seraient disponibles et les colonies pourraient être créées vers le mois de mars.

Pour ce qui concerne le terrain, je n'avais, en Belgique, que l'embarras du choix, les propriétaires se rendant compte des avantages que ces champs d'expériences leur assuraient tant par l'amélioration du sol que par l'introduction d'une industrie nouvelle lucrative. Des abris démontables pourraient être érigés là où la chose serait reconnue nécessaire. Les engrais et graines seraient, à n'en pas douter, offerts gracieusement

* M. Jacobs devrait évidemment trouver des personnes au courant de procédés de culture; sa qualité de conférencier horticole en Belgique lui a permis de constater qu'un non initié n'est pas fait jardinier, et ne peut normalement pas réussir l'examen pour le certificat de Vilvorde, après avoir uniquement fréquenté un cours en quinze leçons. Le gouvernement belge avait d'ailleurs récemment porté le nombre de ces leçons à vingt.

par les vendeurs qui y verront un précieux moyen de réclame.

En vue d'intéresser le personnel des colonies et d'instruire le public, on pourrait tenir dans le courant de l'été, une exposition de cultures et spécialités belges, les recettes nettes seraient encore une fois consacrées à l'une des œuvres de secours.

Les troupes partant pour le front, des baraquements sont disponibles pour servir de logement, et les régiments de cavalerie fournissent partout le fumier nécessaire.

Ce plan a été mûrement étudié et il m'apparaît absolument pratique. Les gouvernements britannique et belge ne manqueront sans doute pas d'accorder leur appui à ma combinaison qui, outre sa portée pratique en ce qui concerne l'alimentation de ce pays, assurerait une occupation saine et agréable à tant de réfugiés.

NOUVELLES DIVERSES.

EN BELGIQUE.—Le *XXe Siècle* apprend que le Landbouwersbond (Association des Agriculteurs de la Flandre Orientale) s'est réuni sous la présidence du député Maenhout. Il fut décidé que tous les fruits seraient achetés à prix fixe par le Comité d'Alimentation, après quoi ils seraient vendus à des conditions avantageuses à la population. Des sommes ont été distribuées à différentes communes pour le défrichement des terres incultes. Le prix actuel des Pommes de terre est de 7 à 11 fr. les 100 kilos. A Bruxelles, les Pommes de terre valent 8 centimes le kilo, Pommes de terre nouvelles 18 centimes, Fraises 60 centimes, Cerises 80 centimes, petits Pois 30 centimes, Carottes nouvelles 30 centimes la botte, Choux-fleurs 40 centimes pièce.

EN HOLLANDE.—Le commerce horticole est très actif. Au cours de la dernière semaine de juin, il a été vendu à Broek van Langendijk plus de 850,000 kilos de Pommes de terre natives et 388,300 bottes de Carottes nouvelles. A Grootebroek les ventes de Pommes de terre portèrent sur 100,000 sacs. Le prix est de 15 à 25 francs les 100 kilos selon qualité. La demande pour l'exportation est toujours vive. De même qu'en Angleterre, les Groseilles s'écoulent à des prix rémunérateurs (couramment 40 à 50 fr. les 100 kilos). La vente des Cerises et des Fraises a également donné satisfaction.

KORT OVERZICHT VOOR DE VLAMINGEN.

In Engeland waardeert men weinig de witte Asperges van't Vasteland. Hier worden de lijnen maar lichtjes bedekt om de scheuten in de lucht te laten ontwikkelen zodat ze groen worden.

Lichte gronden schijnen, minder dan op het Vasteland, gezocht voor de teelt van Asperges, en dit omdat er geen voldoende voorraad water in aanwezig is. Planting is dikwijls zeer dicht. Vormen voor het maken der bussels worden niet gebruikt.

M. L. Jacobs, belgisch voordrachtgever over Tuinbouw, stelt voor den Belgen die anders niet kunnen gebruikt worden, werk te verschaffen met het inrichten van moestelbedrijven. Voor elk dezer zou eerst een belgisch meester-gast gevormd worden. De opbrengst zou men besteden aan het Hulpfonds voor belgische soldaten.

In Brussel zijn de prijzen der meeste groenten en vruchten nu normaal. In Holland is de handel der moestelwekkers opnieuw zeer levendig.

THE BULB GARDEN.

THE STERILITY OF *LILIUM CANDIDUM*.

It is a matter of common observation that in the circumstances generally prevailing in gardens, the White Lily exhibits a degree of sterility remarkable in itself, and especially noticeable in a genus composed for the most part of species abundantly fruitful.

The peculiarity has puzzled botanists for centuries, and while references to it are numerous no investigator seems to have arrived at an entirely satisfying conclusion on the point.

The sterility can hardly be due to any struc-

conclusion that it is particularly responsive to pollination by that Lily. In 1863 Naudin* obtained seed from *L. candidum* growing in pots in a greenhouse alongside some plants of *L. testaceum*, though he does not seem to have been successful in inducing more than a mere fraction of it to germinate.

L. Henry has recorded† that at Grenant (Haute-Marne) in 1905 two clumps of *L. candidum*, five or six metres away from each other with a clump of *L. testaceum* between them, produced abundant seed, and the present writer remembers that for some years a plant of *L. candidum* which had found its way into a patch of *L. testaceum* in his garden produced fairly

and the seed usually germinates. Mr. Horsford finds that the plants resulting from this union are not very strong constitutionally, and the writer is able to confirm this from his own experience.

On the whole, the available evidence goes to show that for some reason *L. candidum* does seem to respond to pollination by *L. testaceum* rather more readily than by its own species, but one cannot as yet say more than this.

Naudin, who has made a study of the subject, has recorded that though, in the ordinary way, *L. candidum* does not fructify under cultivation, it can be induced to do so by any one sufficiently interested to take the trouble, the process being so ancient that it was known to Gesner more than 300 years ago. This old method consists in cutting off the stalks at ground level just before the flowering period is over, and hanging them upside down in a light place. "One can then see the enlargement of the ovaries—that is, of course, provided they have been fecundated—and the stalk remains alive until the seeds have almost matured."

Du Petit Thouars‡ found that "a stalk of *L. candidum* cut off and left in a vase of water produced much fruit," and the present writer once obtained fertile seed from a stalk removed from the mother plant just as the flowers were beginning to fall and plunged in the ground in a spot fully exposed to the sun where it was kept well watered until the seed ripened; moreover, the latter germinated in the ordinary course.

According to Naudin, a Belgian botanist, Van den Born, set about the business in rather different fashion, for without lifting the bulb from the ground he stripped off the scales, leaving only the flowering stalk with its roots, so that the plant continued to receive necessary nourishment. In due course the ovaries enlarged and yielded more perfect fruit than when the stem was cut off above the bulb and ripened independently.

In searching for an explanation of this Naudin advanced the theory that for some reason the formation of sap in the case of this particular species is not, as a rule, sufficient for the nourishment of the bulb, as well as the numerous offsets almost invariably attached to it, and the embryos into the bargain, with the result that in 99 cases out of 100 the bulb attracts the sap and the embryos go by the board; and he reached the conclusion that this is the reason a crop of fertile seed is usually produced when one weakens the bulb by removing offsets and scales just before the flowering period is over.

Dr. Raggioneri, of Florence,§ has pointed out that his experience with *L. candidum* seems to bear out Naudin's theory, for in his garden he has hundreds of plants of this Lily, and, like many other people, finds that only an infinitesimal proportion ripens fertile seed; but in the doctor's garden there is also a vase, about 15 inches in diameter and much the same depth, in which, in addition to a plant of *Agave americana*, there grows a small clump of *L. candidum*; the occupants of the vase receive no nourishment or moisture except what Nature allows them, and the soil in which they are planted has not been renewed for a score of years. As is to be expected, the *Agave* grows but thinly, but year by year the White Lily sends up four stems with eight to ten blooms on each, and these are succeeded by two or three pods of fertile seed. According to Naudin's theory the result is due to the poverty of the soil in the vase, because, inasmuch as the bulbs are unable to reproduce themselves or to bear offsets, such nourishment as is available finds its way to the ovaries, enabling them to regain their functions.

This theory hardly fits in with that which holds *L. candidum* to be especially susceptible to pollination by *L. testaceum*, and one cannot digest Naudin's idea without arriving at the



FIG. 8.—*IRIS FILIFOLIA*: STANDARDS AND FALLS VIOLET, FALLS WITH ORANGE-COLOURED PATCH.
R.H.S. Award of Merit, June 22, 1915 (see p. 30).

tural or mechanical inability on the part of the plant to respond to fertilisation, for all who have studied the subject must be aware that the organs of reproduction in *L. candidum* are perfect examples of Nature's handiwork.

Nor can the peculiarity be ascribed to auto-sterility, for at different times and in varying conditions many investigators have fertilised the flowers with pollen brought from plants a long distance without tangible result.

That *L. candidum* ripens fertile seed when growing in proximity to *L. testaceum* has been noted so often as to lead some people to the

regularly a pod or two of seed; at that time the occurrence excited no particular interest, so the seed was never gathered, and when the Lilies were lifted a few years ago the particular bulb in question was lost sight of.

Some years since the writer received word from Mr. Horsford, of Charlotte, U.S.A., that in his experience *L. candidum* produced fertile seed when pollinated by *L. testaceum*, and the experiment has now been made sufficiently often to enable one to say that in many cases, but by no means all, fructification follows pollination

* *Rev. Hort.*, 1865, p. 12.

† *L.c.*, p. 158.

‡ *L.c.*, 1879, p. 17.

§ *L.c.*, 1907.

conclusion that when grown on thin, poor, dry ground *L. candidum* should fructify in normal fashion.

It is considered by some authorities that to ensure fructification the White Lily requires a greater degree of heat than our climate commonly affords, and while that may be so there is no proof of it; moreover, the tropical summers of 1911 and 1914 tend to dispose of the notion, since, so far as the writer is aware, *L. candidum* showed no unusual tendency to fructify in these two memorable seasons. Reports from Italy, too, show that this Lily is usually as sterile in that hot country as in France and the British Isles.

It is undoubtedly the case that in certain places *L. candidum* produces seed plentifully year by year, and an investigation of the plants and the conditions in which they grow may possibly throw some light on the subject. *A. Grove.*

NOTICES OF BOOKS.

SAXIFRAGE.*

ALL rock gardeners will welcome the issue of a handbook to the Saxifrages from so good an authority as Mr. Irving, and give it a double welcome for the inclusion of the photographic illustrations of some thirty species from the camera of Mr. Malby, whose careful work is so well known in our own pages.

It is as a practical book that the work makes its appeal. The introductory matter is brief, the botanical review of the family is summary, and more space might perhaps have been devoted to explaining the differences between the groups which govern the arrangement of the book, and yet are introduced without comment. But on p. 6 the reader plunges into more practical issues, and the next 100 pages are given to an examination in turn of the groups, with brief hints as to the soil requirements, aspect, and propagation of the species, which are alphabetically arranged in each group. A further chapter on hybrids concludes the portion of the book which, from the use of the personal pronoun, we presume to be exclusively from the pen of Mr. Irving.

Mr. Malby contributes a chapter on Saxifrages in the rock garden, and Dr. John H. Salter a brief review of the Saxifrages of the Pyrenees.

ROSE GROWING FOR THE HOME GARDEN.†

THIS book contains some 150 pages of printed matter with 96 plates in colour, charts and half-tones, so that in one sense the pictures are the chief feature of the book. The coloured plates are of the autochrome type, and in most cases show one flower of each specimen. This is a wise choice, for in this process the results of single flower portraits are generally more pleasing than pictures of gardens where the colours required are more numerous, and the failure adequately to reproduce the greens is a great disadvantage. In many cases the flower portraits are good, but in some the subjects have been selected in an immature stage and give the appearance of having been forced open. The letterpress contains the directions usual in books on Rose growing, and is, on the whole, readable and pleasantly written, though it strikes us that there is rather too much quotation from other writers. We notice the curious statement given on the authority of Miss Kingsley that "Some of the multifloras such as *Crimson Rambler* . . . only flower on the sub-laterals—i.e., on wood three years old," which is hardly true of *Crimson Rambler* in this country, and does not appear in the English edition of Miss Kingsley's work, though there is a somewhat similar state-

ment with regard to *Aglaia*. A whole chapter is devoted to directions for ordering Rose plants, and rather elaborate forms of inquiries and orders are given. This is a task which most amateurs are quite capable of performing for themselves, and such elaborate assistance is unnecessary. The chapter on pruning contains some useful directions for cutting Rose blooms, and in another chapter the author gives a list of Roses in which he makes a praiseworthy attempt to estimate their value at different seasons of the year.

The book is written for Americans, based on Rose growing in the Middle Atlantic States, and it would appear that the chief difference from the rosarian's point of view between that climate and ours is the greater intensity of the winter cold in those parts of America, but the conditions there and here are sufficiently alike to make the greater part of the directions given applicable to both countries, and doubtless many here will read Mr. Thomas's book with pleasure and profit.

JAVA.

GLASSHOUSES IN THE TROPICS.

IN the *Gardeners' Chronicle* for March 27, 1915, p. 168, the question is raised whether glasshouses are needed in the Tropics. In reply I beg to say for tropical seeds a heated glasshouse is as necessary here as in Europe. Several years ago I got seed from Buitensorg of *Saraca declinata*. I sowed them in my glasshouse at Middelburg (Holland) in a temperature of 130° (night and day) and they germinated after five days. Similar seeds sown here without artificial heat required not fewer than eighteen months before they germinated. I always sow seeds of true tropical plants in a very high temperature (100° to 130°), and they always germinate quickly. Palm seeds here require twelve to seventeen months for germinating; in a heat of 120° I got them germinated in ten days. I presume very high temperatures are never used for germinating hard seeds, but I have always got excellent results with them. Glasshouses cannot be obtained here, as no one is interested in Nature, but everyone is interested in money-making and returning to Holland as soon as possible. No one seems to think of anything else. For this reason also there are no nurseries, except a few for raising cut flowers. Besides, the natives cannot be used in horticulture; it is quite useless to try them. Perhaps after some centuries this state of affairs will change.

"COLD" PLANTS IN THE TROPICS.

It is a pity there is no experiment station here in India for scientific investigation; the experiment stations in this country do nothing else but experiment with the few commercial plants in common cultivation: no experiments are made with foreign plants to try them here and watch the result. My own trials with some hundreds of European and other "cold" plants have given results that are astonishing and inexplicable. For what reason does *Achillea millefolium* flower here the whole year round and attain to a larger size than in Europe, while another weed (*Lamium album*) is only 3 cm. high after two years? If there is such a thing as capacity of adaptation, why has one plant this capacity whilst another one has it not? *M. Buysman, Lavang, East Java.*

FORESTRY APPOINTMENT AT EDINBURGH.—

The Governors of the Edinburgh and East of Scotland College of Agriculture have appointed Mr. JOHN M. MURRAY, B.Sc., to the post of Lecturer on Forestry. Mr. MURRAY has been assisting Mr. STEMMING in the Forestry Department of the Edinburgh University, and was formerly a student of the College of Agriculture. He is a son of Mr. MURRAY, forester, Murthly Castle, Perthshire.

HOME CORRESPONDENCE.

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

THE WALL RUE NEAR LONDON.—Now that, with this year, the habitat has ceased to exist, it may interest your readers to know that *Asplenium Ruta-muraria* grew on the graveyard walls of the Friends' Meeting House, within one hundred yards of Wandle Bridge, Wandsworth. The walls have just been repointed to the destruction of the plant. Do any of your readers know of any habitat nearer the heart of London for this—or, indeed, any other—Fern? The only other species I have myself seen was a young plant of *Pteris aquilina* (Bracken) on a tomb in Bunhill Fields Burial Ground. *J. Edmund Clark.*

VEGETABLES AND FRUIT AT EARLY SHOWS.

—Your leader on p. 8 on this subject is instructive. It is certainly a pity there are not more exhibits of vegetables and fruits at the early shows. The international exhibition of 1912 proved that it is possible to obtain exhibits in both these sections in the month of May, and the Council of the R.H.S. can have early fruits and vegetables also if it will offer reasonable cash prizes instead of medals. The latter are very nice, but they will not pay expenses, neither are they so much valued as, perhaps, the Council think they should be. Some employers do not care to pay the expenses incurred by exhibiting; they do not object to their gardener making the exhibits, but the gardener is all too often helpless, owing to the expense involved. The first Silver or Gold Medal or Cup won is much appreciated, but when these become numerous they cease to be attractive. The Society has no lack of funds, and if reasonable prizes are offered for both large and small exhibits of early fruits and vegetables, these will then be forthcoming, and they will undoubtedly add much to the attractiveness of the shows. *E. Molyneux.*

FLOWERING PLANTS EPIPHYTIC UPON TREES.

—Besides Mosses, Lichens, and Ferns, it is surprising how many flowering plants are sometimes seen epiphytic upon trees even in England. A beautiful cluster of Wood Anemone grows with Meadow Sweet (*Spiraea ulmaria*) upon the trunk of a Willow tree, just as it bends horizontal, in a withy-bed near Pill, in Somerset. A Pill in Somerset and Gloucester is a small tidal estuary, and this particular one gives its name to the village at the junction of the stream with the River Avon. The Lesser Celandine grows there, and higher up the deep valley are quantities of the alternate-leaved Golden Saxifrage (*Chrysosplenium alternifolium*), growing with the common one, which has opposite leaves. Besides being alternate, the leaves and flowering shoots are larger in the scarce species, and the hairy root-leaves are sometimes nearly two inches across. It would be interesting to study these two plants ecologically, and discover why the former is usually absent from large tracts carpeted with the other. It may be that the strong vegetative growths of the common species kill everything else that attempts to dispute its dominant character. The experiment might be tried in water-gardens and damp, shady places, for both plants are ornamental. During a walk through the Leigh Woods, between Pill and Bristol, I noticed the following flowering plants growing upon pollard Elms and other trees, namely, Dog's Mercury, Bramble, Red Campion, Ivy, Stinging Nettle, Yellow Archangel (*Lamium Galeobdolon*), *Myosotis arvensis*, Elder, and Wood Sorrel. Of Ferns, there were the common Polypody, Maidenhair, Spine-wort (*A. Trichomanes*), and the Brakefern. In most of these cases a certain amount of humus had formed a suitable bed upon which the seeds of the epiphytic plants could germinate; but in the case of a small Holly growing in the fork of a huge Cedar in the grounds of Redland High School for Girls (formerly Redland Court), Bristol, there appears to be little or no humus, and apparently the Holly, which is about two feet high, derives some of its nourishment from the Cedar itself. Palm trees often have a large number of other plants growing upon them. When wintering at Hyères

* *Saxifrages or Rockfoils.* By Walter Irving and Reginald A. Malby. Illustrated with photographic reproductions in half-tone and colour. 148 pp. Price 2s. 6d. (Hendley Bros.)
† *The Practical Book of Outdoor Rose Growing for the Home Garden.* By George C. Thomas, jun. Price 16s. net. Lippincott, Philadelphia and London.)

in the South of France two and a half years ago. I counted over sixty flowering plants epiphytic upon the Date and other Palms in and about that town, which is often known as Hyères-les-Palmiers. A list of these, with comments, was published in the *Journal of Botany* in 1913. *H. S. Thompson.*

EXPERIMENTS WITH SILVER-LEAF DISEASE (see Vol. LVII., p. 354).—Three years ago a large tree of Alexander Peach, grown inside, developed silver leaf. Instead of destroying the tree, as had been my custom, I decided to lift it and transplant it outside, and before doing so to cut off the large branch which was infected. I used plenty of manure in the soil, and mulched well at planting time. This year this tree is carrying a large crop of Peaches, and there is not a trace of the disease. Evidently it was confined to the branch which was cut off and did not affect the roots. The recovery is a remarkable one. *S. Higgins, Glynnllion Gardens, Carnarvon.*

SEVERE FROST IN JUNE (see p. 10).—I read with interest Mr. Beckett's remarks under the above heading. On the morning of the same date (June 19) we registered 3° of frost on the grass, and the glass in the screen fell to 34°. All tender crops were severely damaged, one rood of Factor Potatoes and four Vegetable Marrow beds being completely wiped out. The young shoots on the Box edgings are frosted back to a distance of three inches. *R. Plomer, Salcey Lawn Gardens, Northampton.*

HAILSTORM IN SOMERSET.—I send three spikes of Sea Matweed (*Psamma arenaria*), strangely knocked about by the hail in the great storm of Sunday afternoon (July 4), which swept over a large part of Somerset and did great damage to crops, trees and houses. This grass is the chief agent in matting together the sand of the sand-hills between Burnham and Brean Down, and these three specimens were gathered on Monday within a few yards of each other. As late as Monday afternoon the fine stretch of hard sand north of Burnham could be seen curiously pitted by hailstones, which blew from the west. The effect suggested the irregular tracks of some animal which had swept over the sands from the sea. On the golf links on the sand-hills the short turf was cut up in places, and leaves, flowers and small branches were strewn about in the district I traversed between Uphill station and the coast. On Mendin the storm was very severe, the hailstones being the largest remembered by the inhabitants. Many were the size of blackbirds' eggs or walnuts, and some measured 1½ inch across. At Backwell, south of Bristol, Mr. Wm. Garnett measured 1.14 inch of rain between 2.30 and 2.55, and the maximum intensity of the rainfall was at the rate of 4 inches an hour. *H. S. Thompson, July 6.*

WOMEN AND FARM WORK.—Miss Mason evades my questions, (1) What are the prejudices of farmers? (2) In what way do they use red tape? I ask these questions for the benefit of farmers generally. Miss Mason charged us with the free use of them; therefore I have a right to ask in what manner they are employed. If Miss Mason ignores these points I shall think she is ignorant of the subject she attempts to teach. *E. Molyneux.*

WAR HORTICULTURAL RELIEF FUND.—A time of year when many horticultural societies are holding their summer shows it may not be out of place to suggest that by contributing as great a proportion as possible of the profits to the War Horticultural Relief Fund, promoted by the Royal Horticultural Society, considerable assistance will be given to a most praiseworthy object. Most societies offer cash prizes, and it may seem somewhat unkind to suggest that exhibitors should refuse to accept it this year. But charity is not giving away something we do not ourselves require: it often means parting with a share of our own necessities, and in a time like the present we must remember our brother horticulturists who have suffered severely under the German invasion. The R.H.S. Fund has made an encouraging start, and it ought to obtain assistance from the efforts of all horticultural societies. *Gurney Wilson.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHCHILD), Buckinghamshire.

WALL FRUITS.—Peaches, Nectarines, Apricots and Plums have finished stoning and the crops may now be thinned finally. The work is usually done by hand, but this method is not considered by many growers to be a good one, for where the fruits have set closely together or the stems are already tough, it is impossible to pull them off without damaging the bark of the tree. It is a safer and better plan to remove the surplus fruits with a sharp-pointed knife. With respect to the quantity of fruit to leave on each tree much depends on the size and strength of the tree and whether it is established or still being trained. Healthy trees may be allowed to carry large crops, but young trees, unless they are making gross growth, should be well thinned of their fruit. Healthy trees of the larger-fruited varieties of Peaches, Nectarines and Apricots may carry one fruit for every square foot of surface; that is to say, a tree occupying a space of 100 square feet may be allowed to ripen about 100 fruits. The smaller varieties should be thinned one-third more, according to their size and the health of the individual tree. Plums should be thinned so that the fruits are not allowed to touch each other if on spurs, whilst those of the larger sorts on young wood should be at least 6 inches apart. Apples and Pears, and particularly the larger-fruited varieties, should be thinned when all risk of the fruits dropping is past.

PEARS ON WALLS.—The fruits are swelling and a check from drought would be serious at this stage, therefore see that the roots are kept moist. Sudden changes in the temperature sometimes cause a check to the young fruits, but there is less danger to be feared in this respect than from alternate drought and moisture at the roots. Liberal applications of diluted manure water, mulchings of half-decayed manure, and frequent syringings overhead will minimise to a large degree the effects of sudden climatic changes. The fruits should be exposed to sunshine. Stop all needless, foreright shoots. Afford adequate protection to the fruits from both birds and wasps. Special bags for the purpose may be obtained in various sizes, and their use is to be preferred to covering the entire tree with muslin or fine netting, which is apt to obstruct the light and retard the ripening of the wood.

CHERRIES.—On the whole the trees are healthy, and early varieties are ripening their crops well. As soon as the fruits are gathered cleanse the trees thoroughly by means of an insecticide containing a fair proportion of soap. Choose a dull day for the operation, well spraying the foliage with clear soft water an hour or so before undertaking the more vigorous application of the insecticide. Continue to train in the young shoots of Morello Cherries, allowing each plenty of room to develop and mature. Do not make the ties too tight to allow of the swelling of the bark. From now onwards encourage the trees to make healthy growth, and, if needs be, water the roots with diluted manure.

PEACHES.—Guard against overcrowding of the young shoots of Peaches trained on walls, many of which have by this time reached the coping or top of the wall. These should be shortened or in some instances removed entirely. Encourage the ripening of the fruit, not by the removal of any of the foliage, but by bringing the fruit forward as much as possible or tying back any growths that may tend to obstruct the light or air. Some of the stronger growths may develop lateral growths, and if these are not required for filling vacant spaces they may be removed. Sappy growths in any part of the trees are useless, as they seldom ripen well or bear fruit. A tree fairly well furnished with shoots of average fruiting size may have all the

stronger growths removed. Trees carrying heavy crops of fruit should be fed with a fertiliser or liquid manure. Until the fruits begin to ripen syringe the foliage daily with clear, soft water late in the afternoon or evening. Trees somewhat advanced in age, although fruitful, may show signs of gumming in the older branches. Where such conditions exist remove the gum with a sharp knife and dress the wounds with styptic.

SUMMER PRUNING.—The summer pruning of wall trees is sometimes made to imperil the basal buds, by forcing them into growth. This trouble may arise from two causes, pruning too early or too severely. The drought of the present season has doubtless lessened the number of strong growths on the trees, especially in the case of Pears, so that most of the trees need less pruning than usual; but all needless lateral growths should be removed as soon as it is considered safe to do so.

STRAWBERRIES.—Prepare the ground intended for new plantations, so that everything may be in readiness for planting by the second or third week of August. Trench or dig the soil deeply, incorporating with it a plentiful supply of well-decayed stable manure. Choose a sheltered situation for planting early varieties, but main crop varieties will succeed best in the open garden, whilst for the later varieties, such as Givon's Late Prolific and Latest of All, a cool and exposed spot should be selected. Runners intended for planting should receive attention daily and be encouraged to grow as rapidly as possible, so that they may be severed from the parent plants at the earliest opportunity. Early planting is advisable, and the work should be commenced as soon as the runners are strong specimens. Remove all superfluous runners. Continue to protect ripening berries from birds, and when watering use clear water. The beneficial effects of deep and highly cultivated ground is very apparent this season, the plants on well tilled land being in a much more healthy and satisfactory condition than those growing in land worked improperly.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

PINKS.—Young shoots of Pinks detached with a heel of the old stem and a few of the bottom leaves removed, will root readily if inserted firmly in sandy soil in a close frame. Water the cuttings freely to settle the soil about them, and spray the foliage lightly twice daily. Admit a little air in the frame occasionally for a short time to prevent damping, and shade the cuttings from bright sunshine. When the plants are rooted admit air freely, and eventually remove the lights altogether. Pinks should be planted in well-prepared soil in September; Mrs. Sinkins, Her Majesty, fimbriata alba plena major, and Albino are all good fragrant white varieties. These old-fashioned flowers are particularly suitable for associating with Lavender, and Roses of the dwarf Polyantha and China types, using only the pinks and lighter shaded varieties of Roses. The effect produced, combined with the fragrance of the blossoms, is most pleasing.

BULBS.—The foliage of Daffodils, May-flowering Tulips and other bulbs naturalised in grass having died down, the grass may be cut. Should it have been decided when the bulbs were in flower to lift and divide the clumps because of overcrowding, this work may be done now or during the next few weeks. Daffodils when doing well and not overcrowded are best left alone, but if it is desired to increase the stock of choice varieties growing in beds, lift the bulbs and sort them into sizes. If fresh beds are ready for replanting the work may be done immediately the soil is dry. If it is intended to replant in the same bed take the opportunity to dig the soil deeply, incorporating a quantity of well-decayed manure in the bottom spit. Daffodils grow well in a rich, well-drained loam; in soil of a very heavy nature mix plenty of road grit or burnt earth from the rubbish yard fire. The soil will require a few weeks to settle before replanting the bulbs; in the meantime store them in a cool, airy structure. Darwin and May-

flowering Tulips may be lifted and stored similarly after drying, the sorting being left for a wet day, and as it is not necessary to replant these before the autumn, the vacant beds will come in useful for pricking out spring bedding or other plants. Bulbs of *Ranunculus* and *Anemone* require the same treatment; the latter may be replanted in October provided the soil is thoroughly drained. The *Ranunculus* bulbs are best kept until February, storing them in bags or boxes of dry sand. The present is a suitable time for increasing the stock of *Belladonna* Lilies, where they have become crowded, or for planting fresh bulbs. The plants do exceptionally well in warm, narrow borders that are drained thoroughly under the outer walls of hot-houses; they grow best in soil composed of loam, leaf-mould and sand. Plant the bulbs 6 inches to 8 inches deep, surround them with sand, and press the soil firmly. Bulbs of the *Belladonna* Lily should not be disturbed unless they are growing too thickly together. Apply a mulching of leaves or litter during the winter.

BORDER CHRYSANTHEMUMS.—Hardy Chrysanthemums, being surface-rooting plants, must not be allowed to suffer for want of water or they will receive a check. Frequent hoeings and a mulching, if not already applied, will be beneficial to the plants. Pinch out the tops of the plants to promote a bushy habit, and be guided by the class of flowers required as to the number of growths to leave. Stake the plants when necessary, and spray to destroy green and black aphides.

THE ORCHID HOUSES.

By T. W. BAISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

DIACRIUM BICORNUM.—Plants of *Diacrium bicornutum* now passing out of flower will soon make fresh growth, and directly roots are seen the plants may be repotted or top-dressed. This Orchid is a somewhat refractory subject, and will make but little progress if a number of old pseudo-bulbs are permitted to remain behind the lead or growing point. As a rule two or three pseudo-bulbs are ample to retain, and those cut off can be utilised for propagating purposes. *D. bicornutum* grows best in a high temperature and moist atmosphere. If the soil is kept in a sweet condition tolerably good results may be obtained for a few years. The compost should consist of Osmunda-fibre or peat and Sphagnum-moss in equal parts, with a moderate sprinkling of crushed crocks to ensure a free passage for water. Ordinary flower pots are suitable receptacles, and they should be filled half their depth with drainage material. During the growing period water the plants copiously, but any that are repotted should be given water sparingly until roots are seen creeping towards the edge of the pot. Shade the plants from strong sunlight until the pseudo-bulbs are near completion, when a little extra light will be beneficial. *D. bilamellatum* often flowers at the same time as *D. bicornutum*, and both species require the same treatment.

EPIDENDRUM PRISMATOCARPUM.—Do not disturb the roots of *Epidendrum prismatocarpum* unless the operation is deemed necessary, when a thorough overhauling should be made, and sufficient rooting space allowed for several years' growth. The best effect is produced by placing several growths in a moderate sized pan, which should be partially filled with drainage material. The rooting medium should consist of Osmunda-fibre two-thirds, and Sphagnum-moss one-third; if the plants are not growing satisfactorily add a few broken Oak or Beech leaves. Make the soil moderately firm, and when arranging the young growths let two or three point towards the centre to make a well-balanced specimen. For a few weeks after repotting keep the soil slightly on the dry side; but whenever moisture is applied give a thorough soaking. Plants of this class of *Epidendrum* will not thrive in a close, stuffy atmosphere; they should be grown in a light, airy position in the intermediate house or the cooler end of the Cattleya division. *Epidendrum*s needing similar conditions include *E. atropurpureum*, *E. alatum*, *E. cochleatum*, *E. fragrans*, *E. radiatum*, *E. osmanthum* and *E. ciliare*.

FRUITS UNDER GLASS.

By JOHN HIGHTAGE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

VINES.—Vines growing in borders and started about the beginning of February are now colouring the berries, and at this stage the vinery should be ventilated freely during the day time and a little at night. In most seasons the use of fire-heat can be reduced to a minimum at about this time; but the weather during the past month has been too cold to permit of this economy. The nights in June were unusually cold, and for the greater time cold winds prevailed during the day; in consequence it was with difficulty that red spider was kept in check. Remove the lateral growths, and especially those near to the roof-glass, as this will allow the air to circulate freely and allow more light to reach the berries. The outside borders should be examined to see that the roots are not suffering from lack of moisture. Spread a mulch over the inside borders, using manure from a spent Mushroom-bed, or meadow hay. The berries on Vines in late houses are swelling freely and the roots should be stimulated with a fertiliser. The ventilators should be closed early in the afternoon, and towards evening the top ventilators should be opened slightly and allowed to remain open during the night. This will permit of excessive moisture escaping, and will have a tendency to harden the foliage, thus preventing leaf-scorching in the early mornings. It should be remembered that the healthier the foliage the longer will the Grapes keep when ripe. Vines from which the Grapes have been cut should be attended to regularly, syringing the foliage twice daily and keeping the border in a fairly moist condition.

MELONS.—As the fruits show signs of ripening, let the air circulate freely in the house and reduce the amount of water at the roots. To prevent the fruits from cracking reduce the amount of moisture in the atmosphere and allow a little air to enter at night by the top ventilator. Should these measures fail to stop splitting in the fruits, cut the shoot on which the fruit is growing half-way through below where the Melon is borne, and again increase the amount of ventilation. Plants intended for cropping late should be planted at once unless the house is not in readiness to receive the plants, when they should be shifted into larger pots and kept growing. Exercise the usual care in watering newly-potted plants. To prevent them from flagging it may be necessary to shade them for a day or two during the hottest part of the day, but afterwards they should be exposed to full sunshine.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUBURNHOLME, Warton Priory, Yorkshire.

HERBACEOUS CALCEOLARIAS.—To secure sturdy *Calceolaria* plants for blooming next March and April sow seed within the next few weeks. Shallow pans or boxes should be used, selecting clean soil and passing that which is used for the surface through a fine sieve. Water this soil thoroughly with a fine rose before sowing the seeds, so that it will only require a slight sprinkling from time to time until the seedlings are large enough for pricking off. The seed does not require any covering, and it is important that the seed pans should be placed in a cool, shady position. When large enough to handle, prick off the seedlings, using a similar compost. Pot off the plants when large enough, and add a little well-rotted manure to the compost. It is only by affording careful attention to these plants while in a young state that they can be grown to perfection.

STREPTOCARPUS.—These plants have greatly improved in recent years as regards their perpetual-flowering character, and they will now flower throughout the entire season. They succeed well when grown in an intermediate temperature, or during the summer months in a cold frame, if shaded from the full glare of the sun. Plants that are in full flower require frequent applications of diluted liquid manure water and weak soot water. Keep all old flowers picked off to prevent seeding. Seedlings sown in January will flower the same season if trans-

ferred to larger pots. For this purpose use a compost consisting of good loam, dry cow-manure, leaf-mould and sand, and maintain a temperature of 55° to 60°, shading the plants from bright sunshine.

CYCLAMEN.—Seeds of *Cyclamen* which were sown last August or September have made fine corms and can be transplanted into 5 and 6 inch pots, which work must be undertaken so soon as the pots are full of roots, or the plants will receive a check and failure will result. Pot the plants moderately firm, using an open compost of loam (two parts), leaf-mould and well-decayed manure, adding sand, a little bone-meal and soot. Plants thus treated should bloom in October or early November, and continue to do so for three or four months. Syringe the plants twice daily, and keep the frame well dusted with soot to destroy thrips. Shade from bright sunshine during the middle of the day. When the plants have matured their growth they will benefit if the lights are removed altogether on warm nights to allow the dew to settle upon the leaves.

GENERAL REMARKS.—Sow a few seeds of the annual *Larkspurs*, *Clarkias*, *Antirrhinums* and *Godetias* for flowering later in the season. Although the flowers will not be so large as those from spring-sown seedlings the colours will be richer, and they afford a change from the usual plants in flower in the autumn.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

LETTUCE.—The plants require careful attention in watering and mulching in dry weather. The drills in which the seeds are sown should be a sufficient distance apart to allow a mulch to be applied before the ground becomes very dry. Material from an old Mushroom bed is suitable and should be spread to a depth of two inches. After the litter is placed in position water the roots copiously. Make small sowings every ten days if the weather continues dry.

ENDIVE.—Sow seeds of Endive in shallow drills drawn at 15 inches apart to furnish plants for use in September, and transplant the seedlings as soon as they are large enough to handle. Water the plants freely until they are of sufficient size for blanching, at which stage the foliage should be drawn carefully together and tied with some soft material. Make sowings of this salad fortnightly from now until the end of August.

ONIONS.—Keep the ground in which Onions are growing free from weeds and water the roots liberally with clear, soft water. Early Onions intended to furnish large bulbs should be mulched with decayed manure. Feed the plants with weak manure water and a little fertiliser, sprinkling the latter along the rows in showery weather. Soot is an excellent fertiliser for Onions, and this also should be applied in showery weather or previous to watering with clear water.

LEeks.—Water Leeks growing in trenches with liquid manure, and if this is not available, spread soot along the rows previous to watering the plants with clear water. Make fresh plantations of Leeks to furnish roots next winter and spring. Plant in rich soil at 12 inches distance between the plants in the rows.

AUTUMN CAULIFLOWERS.—There is still time to make plantations of Halloween Giant or Early Autumn Giant Cauliflower. Also early protecting Broccoli, which comes into use in succession to Halloween Giant Cauliflower. Choose rich ground for these crops. Water the roots liberally in dry weather.

CARDOONS.—These plants require plenty of water at the roots. A few plants should be earthed up for blanching as soon as they are large enough for the operation.

CABBAGE.—Plant Christmas Drumhead Cabbage in rows made 18 inches apart, allowing a space of one foot between the plants in the rows. Water the roots freely until the plants are re-established and hoe the soil from time to time.

RADISHES.—Make a sowing of Radishes behind a north wall and water the seedlings freely to promote a quick growth.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 13—
Nat. Sweet Pea Soc. Show at Roy. Hort. Soc. Hall, Westminster. Saltaire, Shipley and Dist. Rose Soc. Show (2 days). Southampton Carnation Show (2 days).

WEDNESDAY, JULY 14—
Elstree Hort. Soc. Show. National Sweet Pea Society's outing to Chelmsford and Marks Tey.

SATURDAY, JULY 17—
Hinckley Sweet Pea Sh.

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

ACTUAL TEMPERATURES:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, July 8 (10 a.m.): Bar. 29.2. Temp. 63°. Weather—Showery.

Lime and the Ericaceae.

Those who are interested in the curious problem of the effect of lime on Ericaceous plants will be grateful to the various correspondents who have given our readers the benefit of their observations on this intricate subject.

Some of our correspondents—greatly daring—have been so bold as to throw doubt on the prevalent view that lime is harmful to many members of the Heath family. But, whilst admitting that much remains obscure as to the cause of the deleterious action, we are unable to share their views, and we think that the evidence is conclusive in support of the general opinion that many Ericaceous plants are unable to thrive in a calcareous soil.

It is true that Rhododendrons and Azaleas often do well in soils overlying chalk formations, but, as analysis will show, such soils are often singularly free from lime. Such is the case, for example, in the clays capping the chalk downs. These soils are notoriously deficient in lime. Nor is the reason for this paradoxical state of affairs far to seek. For lime readily escapes from a soil, both by the roots of plants and in the drainage water. The latter source of loss is due to the fact that rain-water rich in carbon dioxide converts the insoluble carbonate into the soluble bicarbonate. It is perhaps a far-fetched suggestion that some enterprising gardener with the necessary leisure should try the effect of carbon dioxide gas as a means of frightfulness in destroying the lime in soils on which Rhododendrons fail to grow. Carbon dioxide may be purchased in liquid form in cylinders at a cheap rate, and if it were allowed to escape gradually for some months into moistened soil prepared for the planting of Rhododendrons it may be that the excess of lime would be removed and that the Rhododendrons would grow. The gassing would, we fear, have to be repeated occasionally for success to be maintained. Anyone who doubts the fact that lime-shy plants exist may set his doubts at rest by sowing seed of the common Foxglove in a series of soils ranging from lime-free to lime-rich. The seedlings will be graded in height roughly according to the amount of lime. Those in the soil with but little lime will do well and flower; those in the soil with much lime will remain stunted, bear yellowish foliage, will live a lingering death and fail to flower.

Science has unfortunately little to tell us as to the cause of lime-shyness, nor is it in a position to state whether the cause is the same in the case of the Ericaceae and in that of other lime-shy plants such as Foxglove and Gorse. Recently, however, the subject of lime-shyness in the Ericaceae has been studied by Dr. Rayner, of University College, Reading, who, as a result of a prolonged and brilliant piece of investigation, has brought to light an extraordinary and profoundly interesting series of facts pertaining to *Calluna vulgaris*. This investigator has shown that although the *Calluna* is undoubtedly lime-shy its seedlings are unable to grow in the absence of lime salts. She has also demonstrated that *Calluna vulgaris* as we know it is not a "thing in itself," but a dual personality, composed on the one hand of the plant, and on the other of a fungus. Only in the embryo stage is *Calluna vulgaris* free from the fungus; in every other stage the plant consists of *Calluna* and fungus. As in many Orchids, unless fungous infection of the young plant takes place development does not occur.

This fact, which in all probability holds good for other Ericaceae, opens up new possibilities. Is the lime-shyness due to the effect of lime on the *Calluna* or on its fungus-partner? And is lime-shyness due directly to the ill-effects of lime or its salts on the one or the other organism, or is it due, not to direct action of lime, but to some soil condition brought about by the presence of lime? It is evident, for example, that the fungus may well prove to be intolerant of lime; affected adversely thereby it may suffer and, failing to fulfil its symbiotic contract, leave its ally in the lurch; just as one partner in a firm becoming insolvent may involve another member in disaster.

Dr. Rayner's researches, which are still in progress, will doubtless settle this most material point. They have already provided an interesting explanation of the hitherto puzzling fact that *Calluna vulgaris* is sometimes to be found growing on soil containing considerable quantities of lime. In such cases a third party, in the form of a bacterium, intervenes, and, taking up its residence on the roots, disturbs the harmony of the relation which obtained between fungus and *Calluna* and enables the *ménage à trois* to tolerate what the dual *ménage* found insupportable.

Thus the inquiry into the cause of lime-shyness has been advanced a definite stage, and we venture to predict that it will not be long before, thanks to her careful investigations, Dr. Rayner is in a position to give us the full explanation of this strange phenomenon.

Our Supplementary Illustration.

The Coloured Plate gives a view of an exhibition rock garden, as arranged by Messrs. PULHAM AND SON at the R.H.S. Chelsea Show of last year. The builders made skilful use of a deep plot of ground to form a rocky glen, in which outcropping bluffs of stonework gave opportunities for effective planting, whilst a cleverly planned stream provided a pretty water garden. The stone employed for the rockery

was Derbyshire limestone, the sombre grey tint of which harmonises well with the tints of the various flowers.

NATIONAL SWEET PEA SOCIETY'S SHOW.—The annual exhibition of the National Sweet Pea Society will be held in the Royal Horticultural Society's Hall on Tuesday, the 13th inst. The annual outing will take place on Wednesday, the 14th inst., when the trials at Boyton Hall, Roxwell, Chelmsford, will be inspected and visits made to Messrs. DOBBIE AND CO.'S and Messrs. ALEX. DICKSON AND SONS' nurseries at Marks Tey.

FORESTRY AT ABERDEEN.—At a recent meeting of Aberdeen University Senatus, it was reported that the University Court having consulted the Senatus on the proposal to institute a lectureship in Forest Botany and Forest Entomology, the Senatus expressed its approval of the proposition. The courses in these subjects will qualify for the degree of B.Sc. in Forestry.

THE PERTSHIRE STRAWBERRY CROP.—The first consignment of Strawberries from the Blairgowrie district for the season was despatched by rail on the evening of the 29th ult.

MORE FLOWER SHOWS ABANDONED.—The annual show of the Royal Horticultural Society of Aberdeen, fixed for August 19, 20, 21, has been abandoned. The Parks Committee of the Leicester Corporation has decided not to hold the late show which had been arranged for August 3, 4. At the annual meeting of the Torquay and District Gardeners' Association it was announced that the annual exhibition for 1915 had been abandoned.

FESTIVITIES AT A NURSERY.—On Saturday, the 26th ult., the employees of Messrs. LAXTON Bros., Bedford, met at supper to celebrate the coming of age of Mr. EDWARD LAXTON, junr., only son of Mr. EDWARD LAXTON. Suitable presentations were made and a pleasant evening ensued.

SALE OF FLOWERS AT YORK.—It is customary to hold a flower crusade at York on the occasion of the Yorkshire gala. This year, although the flower show was abandoned, the flower crusade was held as usual, and the sum of £211 18s. 6d. was raised in aid of the York campaign against consumption.

HAILSTORM IN GLOUCESTERSHIRE.—On Sunday, July 4, a very heavy storm visited certain localities in the West of England. Mr. H. G. ALEXANDER, Orchid grower to Sir Geo. L. HOLFORD, states that at Westonbirt about 400 panes of specially thick glass were broken and the plants suffered serious injury from the large hailstones and broken glass.

CLOVER AND LIME.—Recent experiments in U.S.A. show that liming a soil increases the size of Clover plants and the percentage of nitrogen in them, both when the Clover is grown on soils to which no nitrogen has been applied and when grown on soils well fertilised with sulphate of ammonia. If sulphate of ammonia is used as a fertiliser Clover fails unless the soil be heavily limed.

BONFIRES IN WAR TIME.—Arising out of the regulations concerning bright lights during night-time, a defendant at the Shoreham Petty Sessions was summoned for lighting a fire that could serve as a signal. It transpired that he was burning garden rubbish, and to do so at night-time is in certain districts an offence under the new regulations. A similar case was tried in the Southend Court recently, but in this case the crime was setting fire to rubbish in a dust-bin.

WAR ITEMS.—Pte. JOHN DICKSON, of the Dumfries and Galloway Territorials (1/5th King's Own Scottish Borderers) has been wounded at the Dardanelles. Pte. DICKSON, prior to the Territorials being mobilised, was



ROCK-GARDEN AT A CHELSEA EXHIBITION

in the employ of Messrs. BARR AND HUNTER, nurserymen, Maxwelltown, Dumfries.

— Mr. CHARLES E. SIMPSON, of the firm of Messrs. C. E. SIMPSON, LTD., York and Scarborough, has received the news that his youngest son, CHARLES SYDNEY SIMPSON, was killed in action on the Gallipoli Peninsula on or about June 20. The deceased soldier, who was 18 years of age, was serving as a signalling instructor with one of the Australian contingents.

— Mr. WM. MITCHELLHILL, member of the seed firm of that name of St. Joseph, U.S.A., was among the victims of the German submarine which attacked the s.s. *Lusitania*.

— The casualty list gives the name of Pte. BARRON, 1st Gordon Highlanders, amongst those killed in France. Pte. BARRON was a member of the garden staff at Glenkindie, and joined the Army in November last. He was the son of Mr. WILLIAM BARRON, gardener at Esslemont House, Aberdeen.

— Mr. ALEXANDER M'DONALD, curator of Beechgrove Grounds, Moffat, has received news that his son, Private ALEXANDER M'DONALD, has been wounded at the Dardanelles. Private M'DONALD is in the Moffat Company of the 1/5th King's Own Scottish Borderers (Dumfries and Galloway Territorials), and is the first of the Moffat men in the battalion to be wounded.

— Private WM. MACMASTER, son of Mr. A. MACMASTER, gardener at Laurieston Hall, Kirkcudbrightshire, has been wounded in the fighting near Hooge.

— Private WILLIAM CATHCART, of the 1/5th Royal Scots Fusiliers (Territorials), has died from wounds received at the Dardanelles. Private CATHCART was, before he joined the Territorials in October, outside foreman in the gardens of J. A. CAMPBELL, Esq., Craigie, Ayr.

— Mr. THOMAS RAMSAY, gardener, South Beach, Troon, has received information that his youngest son, Tom, of the 1/5th Royal Scots Fusiliers (Territorials), has been wounded by shrapnel while serving with the Mediterranean Force, but was able to write home.

— Mr. GEORGE WAUGH, gardener, Hawick, has been informed that his son GEORGE, of the 4th Battalion of the K.O.S.B., has been wounded at the Dardanelles.

— Sergeant WALTER FORRESTER, of the 1/8th Argyll and Sutherland Highlanders (Argyllshire Territorials), who has been wounded on the Continent, was gardener at Eriska House, Ledaig, Argyllshire, when his battalion was called up at the beginning of the war.

— Second Lieutenant JOHN O'BRIEN, the younger son of Mr. JAS. O'BRIEN, wounded by shrapnel on June 14, but still continuing on duty, was again wounded by accident on the night of June 27. After bringing back the night patrol, he passed over the parapet into the trench, and in the dark struck his forearm against a fixed bayonet, left resting on the face of the trench. He was inoculated for lockjaw, and was well enough to continue on duty.

— Since the outbreak of war one hundred and four members of the staff of Messrs. SUTTON AND SONS have joined the forces, the latest list compiled by the firm comprising forty-one names. The casualties include two killed—G. BOND, 1st Royal Berkshire Regiment, and C. W. CHILD, Dragoon Guards—and Messrs. W. ALLRONES, W. J. KELLY and W. J. T. PERRY wounded. Two of Messrs. SUTTON'S employees have been promoted to commissioned rank—E. M. MEDLICOTT as Second Lieutenant in the 9th Royal Berkshire Regiment, and R. HATCH, Second Lieutenant in the 1st Royal Berkshire Regiment. The names of Second Lieutenant EUSTACE SUTTON, 35th Divisional Signal Co., R.E., and Second Lieutenant A. P. BALFOUR, Army Service Corps, appear in the list just issued by the firm.

CARE OF THE POTATO CROP.—The President of the Board of Agriculture and Fisheries desires to call attention to the fact that there is a considerable supply of last year's crop of Potatoes remaining unconsumed. At this season there is a general demand for new Potatoes, and these, although they are undersized because of the dry weather, are already being disposed of in great quantities. This is a waste of the national resources, since most of the new Potatoes, if left in the ground, would increase considerably in weight. Consumers are therefore urged to make use of the remainder of last year's Potato crop before making large demands upon the new one.

APPOINTMENT OF SUPERINTENDENT OF THE BOTANIC GARDEN, GLASGOW.—Mr. G. H. BANKS, Foreman of the Indoor Department of the Botanic Garden, Cambridge, has been appointed to the charge of the Glasgow Botanic Garden. He succeeds Mr. J. ROUTKE, who was recently appointed Assistant Superintendent of the Glasgow Parks and Gardens. Mr. BANKS commenced his gardening career at Eastington Lodge, Gloucestershire, where he remained for five years. He was then at Watermore House, Cirencester, for a year, and afterwards spent two years in the gardens of Mr. H. J. ELWES at Colesbourne, under Mr. W. WATERS. From Colesbourne he proceeded to Kew, where he remained



MR. G. H. BANKS,
The new Superintendent of Glasgow Botanic Garden.

about a year. Nearly ten years ago he was appointed to the foremanship of the plant houses of the Botanic Garden at Cambridge, where, in particular, his knowledge of Orchids has become plainly evident. Mr. BANKS has raised many hybrids whilst at Cambridge, and his name is commemorated in two fine plants, *Bomarea Banksii* and *Streptocarpus Banksii*.

SWEET PEA SHOW AT THE PANAMA-PACIFIC EXHIBITION.—Under the auspices of the American Sweet Pea Society an exhibition of Sweet Peas was held in the Palace of Horticulture, Panama Pacific International Exhibition, on the 11th ult. The show was originally fixed for June 4, but it was found necessary to change the date on two occasions owing to unfavourable weather. The show lasted for three days. On the Friday the exposition officials recognised the occasion as "Sweet Pea Day," and on their behalf Commissioner CHAS. VOLGELSSANG presented the president, Mr. L. L. MORSE, with a bronze plaque in commemoration of the event. Papers on the Sweet Pea were read by Mr. F. G. CUTHBERTSON, son of Mr. WILLIAM CUTHBERTSON, and manager of the exhibition, and Mrs. SCANNAVINA, president of the State Floral Society. The "star" class of the exhibition was for eight vases of Spencer Sweet Peas from

a list of specified varieties. The 1st prize included a silver cup and carried with it the championship of California. It was won by Mr. DAVID BASSETT, gardener to Mr. LOUIS STERN, Menlo Park, California, with the varieties *Elfrida Pearson*, *Illuminator*, *Margaret Atlee*, *King Edward Spencer*, *New Margaret Madison*, *Nubian*, *King White* and *Mrs. Cuthbertson*. The American National Sweet Pea Society offered prizes for the best lavender coloured Sweet Pea; in this class Mr. S. M. SPAULDING, Menlo Park, California, excelled with the variety *Asta Ohn*. The best vase of a pink variety of the waved type was *Elfrida Pearson*, and the 2nd prize was awarded for *New Miriam Beaver*. The best white variety was *King White*. The *Grandiflora* varieties apparently find little favour with present-day growers in America, for there were but few exhibits of this type of the flower although a special class was provided. In the class for bi-colour varieties *Loyalty*, which is a doubtful bi-colour, was placed 1st; and in the other colour classes the awards were made as follows:—Red, *King Edward Spencer*; pink, *Mrs. Hugh Dickson*; cream, *Margaret Atlee*. The president offered a Cup for a floral design of Sweet Peas, and it was awarded for a *Parasol*, each section being worked with a different variety. Traders showed collections in a special class. Messrs. C. P. MORSE AND CO. exhibited some two hundred varieties, and this collection was stated to be amongst the finest ever seen in America. Some of the blooms had stems 25 inches long. It included a new variety named *Scintillator*, a cream-ground *Aurora*; the variety received an Award of Merit. The exhibit was awarded the Gold Medal of the British National Sweet Pea Society, and was recommended by the Jury of Awards for a Medal of Honour from the Panama-Pacific Exhibition authorities. Messrs. W. ATLEE BURPEE AND CO., Philadelphia, were awarded the Silver Medal of the British National Sweet Pea Society for an exhibit occupying a space of 100 square feet. The centre was filled with the new variety, *Fiery Cross*, which also received an Award of Merit. This exhibit also received a Gold Medal.

BURPEE'S CHOICE.—Our contemporary *Horticulture* prints some details concerning the purchase by Mr. W. ATLEE BURPEE of a new variety of Sweet Pea. It seems that Mr. BURPEE first saw the scarlet variety *Fiery Cross* at the London exhibition of the National Sweet Pea Society last season, where it was awarded a Silver Medal. Mr. BURPEE was at once convinced of the superlative qualities of this Pea, and lost no time in hunting up the raiser, Mr. MALCOLM, of Duns. He is said to have enquired of Mr. MALCOLM how much seed he possessed, and was told that the stock was 3 ounces. "Will you take £250 sterling for the 3 ounces and the right to introduce?" asked Mr. BURPEE. The Scotch Pea raiser replied, "I will." Consequently the somewhat astonishing price of \$417 an ounce was paid for this novelty.

FRUIT CROPS IN SOUTH BRITANNY.—The Board of Agriculture and Fisheries has received from His Majesty's Consular Agent at Lorient a report on the fruit crops in the Morbihan Department. An abundant crop of cider Apples is expected, and in view of the stocks of old cider it is not probable that prices will exceed 50s. per ton. Williams' Bon Chrétien Pears will be more or less abundant according to locality, and a certain amount may be available for export. Dessert Apples promise well; it is too early to give quotations, but they are expected to realise about £5 to £6 5s. per ton, according to quality. Chestnuts promise an abundant yield. The cultivation of Strawberries has developed considerably around Vannes, and some hundredweights will be shipped daily to England from June till September. Cherries are a fairly big crop. It should be possible to export some quantity of the early kinds of Plums and Greengages.

ROYAL HORTICULTURAL SOCIETY.

Exhibition at Holland House.

July 6, 7, 8.

THE summer show of the Royal Horticultural Society was held, as usual, in the grounds of Holland House, Kensington, the residence of Mary Countess of Ilchester. The weather on the opening day was fine, and large numbers of visitors were present, but on Wednesday rain fell in the forenoon, which is in keeping with the traditions of these shows, many of which have been marred by inclement weather. The arrangement of the tents on this occasion was not on the stereotyped lines, but the five large marquees were so disposed as to form a hollow square, so that it was possible to make a circuitous tour of inspection without breaking the journey. The lawn enclosed by the tents was occupied by exhibits of sundries, and groups of trees and shrubs and similar subjects that appear more appropriate out-of-doors. The new arrangement gave an impression of greater completeness to the exhibition, and except for the placing of a particular tent that obstructed the view of the beautiful old residence the innovation was welcomed. Orchids almost filled one tent, and they were happily associated with Sweet Peas. Next in importance to the Orchids were the collections of hardy flowers. Roses, Begonias, Sweet Peas, Carnations and stove plants were also shown well. There were fewer collections of fruits and vegetables than ought to be the case at these shows, and we specially missed the exhibits of pot fruit trees from nurserymen, and the Aldenham collection of vegetables.

The Council entertained the members of the various committees and the judges at luncheon on Tuesday. The president, Lord Grenfell, congratulated the society on the success of the show and the progress of the society. He stated that much was due to the work of the various committees, to whom he proposed a vote of thanks. Mr. W. J. Jeffries, of Cirencester, responded. In proposing the health of M. Philippe de Villemorin, who was present as a guest, the president referred to the War Horticultural Relief Fund, and commended it to the sympathy and help of all the Fellows. In response to the toast, M. de Villemorin thanked British horticulturists for the efforts they were making to alleviate the sufferings of their gardening friends in the countries of the Allies.

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. W. Cuthbertson, W. H. Morter, J. E. McLeod, J. W. Moorman, C. Blick, W. H. Page, J. Jennings, C. Dixon, John Dickson, W. G. Baker, W. Bain, E. H. Jenkins, J. Green, G. Reuthe, C. T. Druery, W. P. Thomson, H. J. Jones, W. Howe and R. Hooper Pearson.

AWARDS.

FIRST-CLASS CERTIFICATE.

Lilium regale (see fig. 9).—This lovely Chinese Lily, sometimes known as Wilson's Lily, for it was one of his finest collections, was given an Award of Merit when shown by Messrs. R. Wallace and Co. at the International Horticultural Exhibition in 1912 as *Lilium myriophyllum*. Its beauty lies in the white trumpet, richly throated inside with yellow and shaded outside with rose. Its value rests in its splendid vigour as a garden plant, loving loam, lime and sunshine. A beautiful group of flowers was shown by Miss WILLMOTT, V.M.H., Warley.

AWARDS OF MERIT.

Lilium × *Amos Perry*.—This is a reputed hybrid between *L. Humboldtii* and *L. Parryi*, and promises to be a good garden plant. As shown, the flowers (two on a head) were 6 inches in diameter, with the general form of *Humboldtii*, to which also the foliage appeared to belong. In colouring it is bright orange-yellow, finely dotted with chocolate, but this dotting does not

extend over the last inch of the recurving petal tips, and the green eye again reminds one of the predominant partner (*Humboldtii*) in the union. Shown by Mr. AMOS PERRY.

Verbena chamaedryoides.—A hardy, trailing species with intense scarlet flower heads, 12 or more flowers out at once in a flat cluster, and small, opposite, rough, dentate leaves. During the last few winters it has generally proved hardy, given a well-drained, sunny exposure. A four-year-old plant was shown, making a dense flat mat of foliage and flower heads 2 feet across. A remarkable specimen. Shown by Mr. REG. PRICHARD.

Sweet Pea Jean Ireland.—The petals are cream-coloured, suffused with a picotee edge one-eighth to one-quarter inch in breadth. The blooms are large, with much-waved standards, and borne in threes and fours on the stems. It is most intelligibly described to Sweet Pea lovers, perhaps, as a cream Elsie Herbert, but it will not be entirely new to them, as it was awarded the First-class Certificate of the National Sweet Pea Society last season. Shown by Messrs. DOBBIE AND CO.

Heimerocallis Golden Bell.—A fine seedling, notable for its vigour, good size and purity of colouring, but its value lies specially in the breadth and substance of petal, which make it the most beautiful Day Lily known to us. The natural colour is rich yellow. Under canvas the colouring had developed a paler, softer yellow. The height is about 3 feet. The flowers have an open bell shape, about 5 inches across. The segments are an inch in breadth. Shown by Messrs. R. WALLACE AND CO.

Begonia Mrs. W. Cuthbertson.—A lovely flower of a soft, clear pink, full petalled, with high centre, and 6 inches in diameter. The edges are deeply and very richly frilled, which gives the flower a special charm.

Begonia Lord Methuen.—A large, full flower of intense scarlet, nearly 6 inches in diameter. The petals but slightly waved, the whole flower of finely-balanced form. These two shown by Messrs. BLACKMORE AND LANGDON.

Rose Queen Alexandra.—This cream-coloured, single, hybrid Tea, with tints of flesh in it, was described and figured in the issue for the 3rd inst. It was again well shown by the Rev. J. H. PEMBERTON.

Erica cinerea atrorubens.—A bright violet rose seedling of *E. cinerea*, paler on the lower half of the bell. It is richer in colour than rosea, and brighter than atropurpurea, and was adjudged the best of the set of seedlings shown by Mr. G. REUTHE.

Rose Queen of Fragrance.—At the last year's show this variety was awarded the "Clay" Cup as the most fragrant of the new Roses exhibited, but it was then severely criticised for its lack of form. As now shown it makes a pleasing garden Rose, short petalled but full, and showy from its fine size and bright-pink colouring. It will be a favourite for its fine fragrance. Shown by W. PAUL AND SONS.

OTHER NOVELTIES.

Messrs. BEES, LTD., showed *Clematis chrysocoma*, a delightful trailing species scarcely exceeding 18 inches in height. The flowers are pale lilac-pink, 1½ inch in diameter, reminding one of those of *Clematis montana rubens*. *Inula acaulis*, with yellow flowers 2 inches in diameter on 1 inch high stalks, was shown by Miss WILLMOTT, V.M.H. *Crinum Johnstonii* was shown by Lady PHILLIMORE, Campden Hill. Messrs. R. WALLACE AND CO. exhibited a new Chinese *Primula* (*P. nutans*). When examined by the Committee the plant showed signs of suffering from travelling. It is one of the loveliest members of the genus, and is now flowering for the first time in this country. It represents the section *Soldanel-*

loides, hitherto unknown in gardens, having hanging bells, with large, open salver-shaped corollas in an oblong spike. The colour is a lovely shade of pale lavender, made more pleasing by the dusting of white meal on both calyx and corolla. Height 18 inches. The plant was collected by Mr. George Forrest and was grown by Mr. Fitt, Werrington Park Gardens, Launceston, where it withstood the winter.

GENERAL EXHIBITS.

ROSES.

The fact that 19 awards, including three Gold Medals, were made to collections of Roses, is some indication of the extent and quality of the exhibits. In point of fact, this year's Show will be long remembered for the excellence of the Roses, which in many instances were arranged with great skill and taste. In the hot weather of the first day the majority of the blooms remained fresh, fragrant, and attractive until closing time. This was due to the assiduity of the representatives of the various exhibitors, as well as to the judgment which must have been exercised in selecting the flowers.

The Wigan Cup, offered for the best group of Roses in the show, and a Gold Medal was awarded to Mr. ELISHA J. HICKS, Twyford, for a magnificent collection. All kinds of Roses—for pillars and pergolas, for massing in the garden, and for exhibition—were displayed in great variety, and of first-class quality.

Messrs. B. R. CANT AND SONS, Colchester, were also awarded a Gold Medal for a magnificent collection of Roses. The blooms were arranged in tall stands and on exhibition boards, and of the many it was the fragrant pink *Colcestria* variety which won the Clay Cup, whilst the brilliant *Augustus Hartmann* attracted universal admiration.

Messrs. WM. PAUL AND SON, Waltham Cross, displayed their collection in the most natural and effective manner. The splendid Paul's Scarlet Climber, which was awarded one of the Gold Medals of the National Rose Society on the 29th ult., formed three luxuriant pillars profusely flowered with brilliant scarlet blooms. Surrounding the pillars were massed such as last year's Clay Cup variety, *Queen of Fragrance*, which has all the attributes of a first-class garden Rose, *Ophelia*, and the rich golden *Rayon d'Or*, making with many other varieties a memorable display.

Mr. C. TURNER, Slough, arranged many *Wichuraiana* standards effectively over a ground-work of dwarf varieties. The specimens of *Blush Rambler* and *American Pillar* and the masses of cut blooms of *Mme. E. Herriot* and *Lyon* were splendid. (Large Silver Cup.)

Messrs. G. PAUL AND SON, Cheshunt, filled a large ground space with a light and graceful arrangement. Of the many varieties it was such pink H.T.'s as *Mrs. J. H. Welch*, *Mrs. George Shawyer*, *Willowmere*, and *Mme. Segord Weber* that predominated. (Silver Cup.)

Messrs. STUART LOW AND CO., Enfield, displayed many excellent Roses. The central stand of *Rayon d'Or* and *Chateau de Clos Vougeot* was particularly effective. (Standard Cup.)

Silver-gilt Flora Medals were awarded to Messrs. W. and J. BROWN, Peterborough, for a group principally of floriferous arches and pillars of Roses; Messrs. F. CANT AND CO. for Roses in large vases and exhibition boards; Messrs. ALEX. DICKSON AND SONS, Newtownards, who included magnificent blooms of *H. V. Machin* and *Augustus Hartmann*; and to Mr. GEORGE PRINCE, Oxford, who had fascinating vases of *Rosette de la Legion d'Honneur*, *Mme. Abel Chatenay* and *Mrs. A. Tate*.

Silver-gilt Banksian Medals were awarded to Mr. HUGH DICKSON, Belfast, for seedling Roses, and to Messrs. JACKMAN AND CO., Woking.

Silver Flora Medals were awarded to Messrs. G. BUNYARD & Co., Maidstone; Messrs. G. and W. H. BURCH, Peterborough, and to Messrs. HOBBS, LTD., Dereham.

Silver Banksian Medals were awarded to Mr. R. C. NOTCUTT, Woodbridge, and the Rev. J. H. PEMBERTON, and a *Bronze Flora Medal* to Messrs. WM. CUTBUSH & SON, Highgate, for collections.

CARNATIONS.

Mr. A. F. DUTTON, Iver, Buckinghamshire, staged a group of Perpetual-flowering Carnations for which a Gold Medal was awarded. The novelty Chelsea, a Fancy, the white ground having pink markings, was conspicuous in the centre of the group, and others especially good were Iver Yellow, Champion (scarlet), Queen Alexandra (pale salmon colour), Triumph and Gorgeous. (Gold Medal.)

Mr. JAMES DOUGLAS, Edenside, Great Bookham, showed border Carnations, as usual of the highest quality. The 40 varieties staged included the best in commerce, such as Robt. Berkeley, Lieut. Shackleton, Bookham White, Daisy Walker, Elizabeth Shifner, Daffodil and Bookham Clove. (Silver-gilt Banksian Medal.)

Mr. H. LAKEMAN, Thornton Heath, Surrey, showed border Carnations, including the beautiful yellow-ground Fancy, Lieut. Shackleton (shaded with pink), Lady Hermione, rose colour, was also shown well. (Silver Banksian Medal.)

MESSRS. LAXTON BROS., Bedford, exhibited their new salmon-pink Perpetual-flowering Carnation, named Bedford Belle. It is a moderate-sized bloom, very full, and of the Britannia type. (Silver Banksian Medal.)

MESSRS. STUART LOW AND CO., Enfield, exhibited a group of Perpetual-flowering Carnations arranged very pleasingly in earthenware bowls and jars. The "Malmaison" variety Lady Coventry, of cherry-red colour, was remarkably good. (Silver-gilt Flora Medal.)

Mr. CHAS. TURNER, Slough, exhibited Souvenir de la Malmaison varieties, for which a Bronze Flora Medal was awarded.

MESSRS. YOUNG AND CO., Cheltenham, exhibited varieties of Perpetual-flowering Carnations, for which a Silver Flora Medal was awarded.

Mr. H. BURNETT, Guernsey, exhibited a bright group of Carnations, the blooms being equal in quality to any at the show. (Silver-gilt Flora Medal.)

MESSRS. W. CUTBUSH AND SON exhibited vases of Perpetual-flowering Carnations in their imposing exhibit of flowers in the large tent. (Silver Banksian Medal.)

BEGONIAS.

Never before has such a group of magnificent tuberous-rooted Begonias been seen at a flower show as that which won the Coronation Cup for Messrs. BLACKMORE AND LANGDON, of Bath. On former occasions they have exhibited varieties which have merited very high praise, but this year they excelled their own high standard. These splendid examples of the highest cultural skill were arranged in a most effective manner. The scheme was a large undulating bed with two small circles in front of Delphiniums. One circle contained a bright crimson variety, Duchess of Cornwall, whilst the other was filled with the rich yellow Mrs. W. Ainslie. Of the many other varieties the names of Lady Tweedmouth and Mrs. Cuthbertson (soft pink), Mrs. R. Caulfield (deep pink), Irene Tambling (rich orange), and Royal George (crimson) may be given as representative of the exhibit, which was characterised by rich, healthy foliage and flowers of immense size, yet without the least suggestion of coarseness. The colours were exceedingly fresh and beautiful. A few hanging baskets of such pendulous varieties as Golden Shower, Lena, and Fleur de Chrysanthème gave an artistic finish to the exhibit (Gold Medal.)

MESSRS. T. S. WARE, LTD., Feltham, also exhibited double-flowered tuberous Begonias, which, although they suffered by comparison with Messrs. Blackmore and Langdon's stupendous blooms, evidenced high cultivation. All the plants were furnished with healthy growing foliage, and carried perfectly formed double flowers of beautiful colours. The orange

shades were conspicuous, and of these King George V., Hon. Mrs. Maurice Glyn, and John Oliver were very beautiful. Lady Muriel Digby (white) and Lady Ebury (frilled pink) were also admired. (Silver-gilt Flora Medal.)

SWEET PEAS

If the number and quality of the exhibits at flower shows are a criterion the popularity of the Sweet Pea is still very high. There were many exhibitors, and when we remember the long drought, which is always so detrimental to leguminous plants, but which now seems to be at an end, nothing but high praise can be accorded to these very fascinating exhibits.

Messrs. DOBBIE & Co., Edinburgh, showed a large collection which was characterised by their

Messrs. HOBBS, LTD., Dereham, showed a large collection, of which King Alfred, Hercules, Mary Holmes, Mrs. Kate Hammond, and Reim are a representative selection. (Silver-gilt Flora Medal.)

Messrs. A. DICKSON & Sons, Newtownards, displayed Sweet Peas which in quantity almost rivalled their immense group of Roses. Of the many excellent varieties Barbara, The President, Inspector and Mrs. J. C. House were magnificent. (Gold Medal.)

Messrs. E. W. KING & Sons, Coggeshall, displayed their Sweet Peas in arches and a central trophy which was exceedingly attractive. (Standard Cup.)

Messrs. JOHN K. KING & Sons, Coggeshall, arranged many beautiful varieties on a staging



FIG. 9.—LILIU REGALE (SYN. MYRIOPHYLLUM) IN MISS WILLMOTT'S GARDEN, WARLEY PLACE, ESSEX. (The low-growing plants on the left are *L. Willmotiae*.)

usual skill and taste in arrangement and by high quality. The variety Jean Ireland, which received an Award of Merit, had especial prominence, and of the other sorts mention can only be made of Hercules, Illuminator, Inspector, Marks Tey and Royal Purple. (Gold Medal.)

Mr. J. SREVENSON, Wimborne, had many novelties in his collection of Sweet Peas. Of the new varieties Golden Glory (a soft shade of golden orange), Peace (pink), Victory (salmon-red) and Warrior (chocolate maroon) were very charming. (Silver-gilt Flora Medal.)

Mr. J. Box, Lindfield, Haywards Heath, included such popular varieties as Rosabelle, May Campbell, Agricola, and a charming novelty, Lindfield Grey, in a first-rate collection. (Silver Flora Medal.)

at an entrance to the tent. (Silver-gilt Flora Medal.)

LORD NORTH, Wroxham Abbey, Banbury (gr. Mr. E. R. Jones) contributed an excellent collection, of which mention may be made of Edward Cowdy, New Marquis, Margaret Atlee, Barbara and Princess Victoria as being particularly fine. (Gold Medal.)

Messrs. S. BIDE & Sons, Farnham, included very fascinating vases of Dick Bide and Marks Tey (both of maroon shades), with many other first-rate varieties. (Large Silver Cup.)

Messrs. R. SYDENHAM, LTD., Birmingham (Silver Flora Medal), Messrs. J. STARK & SON, Great Ryburgh (Bronze Flora Medal), and Messrs. JARMAN & Co., Chard (Silver Flora Medal), also showed valuable Sweet Peas.

STOVE PLANTS.

Mr. L. R. RUSSELL, Richmond, exhibited an imposing group of stove plants, principally fine foliage plants, with a group of *Solanum Wendlandii* in flower as a centrepiece. On stands were placed superb plants of *Nepenthes*, the large-pitched variety *Sir W. T. Thistleton Dyer* having place of honour. At the back of this was a standard of *Acalypha nassopifolia* (Sanderiana), the most effective way of growing this showy plant, for the long, scarlet racemes hang gracefully swaying with the breeze. At the foot of the *Acalypha* was a batch of *Alpinia Sanderiana*, with broad, silvery bands on the Bamboo-like foliage. Other choice plants were *Codiaeum* (Croton) *Russellianum*, *Anthurium Veitchii*, *Alocasia argentea*, *A. Watsoniana*, *Nidularium Meyendorffii*, *Dracaena Victoria* and *Aralia triloba*. (Silver-gilt Flora Medal.)

Messrs. JOHN PEED AND SON, Norwood, exhibited *Caladiums* in variety, with a broad band of well-flowered *Gloxinias* as an edging. The beautiful tinting in the *Caladium* foliage was much admired, the hot season suiting these showy exotics. Of the varieties, *Silver Queen*, *Herr Duffner*, *Sir Julian Goldsmith*, *Auguste Carpenter*, *Sir Henry Irving*, *John Peed* and *Mrs. H. Veitch* are a selection. (Silver-gilt Flora and Silver Banksian Medals.)

MISCELLANEOUS INDOOR PLANTS.

Messrs. R. AND G. CUTHBERT, LTD., Southgate, exhibited greenhouse plants. A tone of lightness was afforded by the feathery spikes of *Humea elegans*, and the background was of *Cocos Palms*, the tall leaves drooping like a cascade. In the body of the group were the orange-flowered *Streptosolen Jamesonii*, banks of *Astilbes* (*Spiraeas*), *Liliums* and *Pelargoniums*, but the *pièce de résistance* was a clump of the delicate mauve-flowered *Viscaria oculata coerulea*. (Silver-gilt Banksian Medal.)

Messrs. STUART LOW AND CO., Enfield, exhibited a group of *Begonia Lucerna*. The flowers are in great clusters and the inflorescences hang gracefully, the salmon-pink colour being enhanced by the metallic-green leaves, which have bronzy-red undersides. In this exhibit were plants of *Statice imbricata*, *Oleander splendens* and *Streptocarpus* of a good strain. (Silver Banksian Medal.)

Messrs. GODFREY AND SON, Exmouth, exhibited large-flowered decorative *Pelargoniums*, in which this firm specialises. The new variety *Princess Mary* has very large, soft-salmon coloured flowers with a chocolate-maroon blotch. Other novelties are *Grandeur*, cinnamon-red with black blotches; *Exmouthian*, pale pink with upper petals crimson-maroon; and *Topsy*, maroon, the deepest coloured variety. (Silver Banksian Medal.)

Messrs. H. CANNELL AND SONS, Eynsford, Kent, exhibited varieties of zonal-leaved *Pelargoniums*, including the novelties *Golden Lion* (orange-scarlet) and *Louis Chauvin* (salmon). Mr. VINCENT SHADE, Taunton, and Messrs. JARMAN AND CO., Chard, both exhibited varieties of zonal-leaved *Pelargoniums*.

Messrs. W. CUTBUSH AND SON showed their new Ivy-leaved *Pelargonium Radiance*, a very free blooming variety with scarlet-cerise flowers.

Col. the Hon. MARK LOCKWOOD, Bishops Hall, Romford, exhibited numerous varieties of *Fuchsias* as small pot plants. (Silver-gilt Flora Medal.)

A collection of miniature Japanese gardens was displayed by the YOKOHAMA NURSERY COMPANY, Craven House, Kingsway, London. They were perfect models, some in pans not more than one foot across, in which streams, bridges, cliffs, trees and buildings were in faithful proportions, with pigmy trees at appropriate situations. (Silver Flora Medal.)

FERNS.

Messrs. J. HILL AND SON, Edmonton, exhibited a group of Ferns occupying a space of 400 square feet. The group appeared as a raised bank of greenery, the tintings varying in degree; some of the fronds were almost golden, and the diversity of form was remarkable. At the back were grouped the Tree Ferns, the giants of the race, *Dicksonia antarctica* throwing its huge fronds overhead, its companion being a

magnificent plant of *Polypodium quercifolium*, the Oak-leaf Fern, from the shape of the barren fronds which cluster about the base of the taller fertile leaves, serving the useful purpose of holding moisture-retaining debris. In the centre was a grand plant of *Polypodium Maudslayi*, the arching, glaucous fronds being very deeply notched, and about this were *Stag's Horns*, including *Platycerium Willinkii* and *P. grande*. Others of special merit were *Pteris tricolor*, *Gleichenia spelunca*, *Davallia retusa*, *Pellea ternifolia* and *Davallia fijiensis robusta*. (Large Silver Cup.)

Messrs. H. B. MAY AND SONS, Upper Edmonton, arranged a group of Ferns as a table exhibit, the plants being raised on tiers, the back row being 30 feet above the ground. In this exhibit prominence was given here and there to choice specimens, these acting as foils to break the otherwise flat front. The general effect was grand, and every plant was an object-lesson in good cultivation. An old piece of *Platycerium alcinore*, the mass weighing two hundredweight, occupied the place of honour in the centre, backed by a huge plant of *Davallia fijiensis elegans*, grouped on either side by Oak-leaved Ferns, *Drynaria quercifolia* and *Polypodium Vidgenii*, the "Oak leaves" of the latter being the more elegant. *Nephrolepis Mayi* has not only departed from the normal in its twisted, narrower fronds, but has assumed a tree habit, the caudex being upright and 2 feet long. The rare *Lastrea patens Mayi* was one of the most elegant in the collection. The pale green fronds have pointed pinnules which are overlapping, the sub-divisions reaching to the rachis, making a very elegant leaf. (Large Silver Cup.)

Mr. AMOS PERRY, Enfield, exhibited hardy Ferns, including *Polystichums*, *Lastraeas*, *Scolopendriums* and *Athyriums*. The gem of the collection was a sporeling of *Polystichum angulare divisilobum plumosum*, with dark green fronds having gold at the edges. The pinnules overlap, making a plume-like frond. Other fine plants were *Athyrium felix foemina todacoides*, *Woodwardia orientalis*, *Lygodium scandens*, *Adiantum pedatum Klondyke* and *Dictyogramma japonica variegata*. (Silver-gilt Flora Medal.)

HARDY PLANTS.

Mr. G. REUTHE, Keston, Kent, showed a collection of hardy flowers, rich in little-known species and varieties. Special attention attached to his new seedling forms of *Erica cinerea*, of which one is noted under Awards. Unusually fine spikes of the hybrid *Martagon Lilies* were shown, including *Dalhansonii*, *Marhan*, G. F. Wilson, and *Miss Willmott*. *Campanula pusilla pubescens* is a new form. *Acantholimon venustum* was particularly well shown, and flowering sprays were included of *Eucalyptus ficifolia* and *Prostanthera lasiantha* among other good things. (Silver-gilt Flora Medal.)

Mr. R. PRICHARD, Westmoors, Wimborne, made a small but fascinating exhibit of little-known rock plants. *Verberna chamaedryoides* is referred to under Awards of Merit. The bright yellow *Ruta Patavina* was noteworthy, while *Silene westmoorensis* (a Hooker-Elizabethae hybrid) and *Campanula westmoorensis* represented the best of some new seedlings. *Gentiana straminea* and *Hypericum cuneatum* were also noted as good.

Messrs. KELWAY AND SON, Langport, showed some admirable varieties of *Delphiniums* and *Gaillardias*. In the former the dark shades predominated, and the masses of *Dusky Monarch* and *Smoke of War* found many admirers. (Silver-gilt Banksian Medal.)

Mrs. E. LLOYD EDWARDS, Bryn Oerog, Llangollen, sent a pretty series of new *Heucheras*. *King George* and *Queen Mary* represented the best of the scarlet and rose shades respectively, while *Edge* hybrid Improved represented a pretty shade of clear pink.

MARY DUCHESS OF LICHETER, Holland House, W. (gr. Mr. C. Dixon), sent an interesting collection of *Sempervivums*, encrusted *Saxifrages* and *Mesembryanthemums*. Of the Houseleeks alone we noted over fifty species and varieties, so that the collection was a very representative one. (Silver-gilt Banksian Medal.)

Messrs. GODFREY AND SON, Exmouth, staged their good strain of *Canterbury Bells*—in about half a dozen shades. (Silver Banksian Medal.)

Messrs. R. H. BATH, LTD., Wisbech, showed *Delphiniums*, *Paeonies*, and similar hardy herbaceous plants.

Messrs. W. CUTBUSH AND SON, Highgate, making a pool of *Water Lilies* a centrepiece to a group of hardy flowers, staged round it a number of good masses of *Delphiniums*, *Campanulas*, *Spiraeas* and other herbaceous plants. *Lilium Grayi* and some particularly fine masses of *Lilium Humboldtii magnificum* were the feature of this group. (Silver Banksian Medal.)

Mr. R. C. NORCUTT, Woodbridge, Suffolk, staged some good spikes of new *Delphiniums*, with *Statice Suworowii* and its white form.

Mr. G. W. MILLER, Wisbech, included among his representative group of hardy plants some fine spikes of *Lilium giganteum* and *L. croceum*. *Delphiniums* and *Verbascons* also represented his specialities. (Silver Flora Medal.)

Messrs. G. A. CLARK, LTD., Dover, showed a collection of useful herbaceous plants—*Iris*, *Delphinium*, *Isatis*, with some pretty forms of *Alstroemeria*. (Silver Banksian Medal.)

Messrs. WALSHAW AND SON, Scarborough, showed a good collection of the coloured *Astilbes*—*Queen Alexandra Improved*, *Philadelphia*, *America* and others.

No group abounded more in new and rare plants than that shown by Messrs. BEES, LTD., Sealand, Chester, although scarce plants were not allowed to oust from the groundwork of the group masses of *Delphiniums* and commoner subjects. *Clematis chrysocoma*, *Ranunculus Lyallii*, *Roscoea capitata-purpurea*, *R. caudicoides*, *Primula pseudo-capitata*, *P. pulchella*, *Trollius sinensis* and *Hypericum laeve-rubrum* are a few of the more notable plants. (Two Silver Flora Medals.)

Messrs. H. CANNELL AND SONS, Eynsford, showed *Delphiniums*, *Paeonies*, *Gaillardias* and similar herbaceous plants.

Messrs. T. S. WARE, LTD., Feltham, staged a rich group of herbaceous plants. In the *Delphiniums*, *Statice Rude*, *Candidat*, *Capri* and *Lavanda* were notable. Some choice forms of *Campanula lactiflora* were shown, with *Lavatera Olbia*, *Malva moschata* and *Lychnis Haageana*. (Silver-gilt Banksian Medal.)

Mr. J. C. ALLGROVE, The Nurseries, Langley, Slough, arranged a study in blue and yellow. The many shades of *Delphiniums* were the groundwork of the former. In the latter were the *Eremurus* (the Bungei forms being particularly good), *Thalictrum glaucum*, *Senecio stenoccephala*, *Iris aurea*, and the new *Trolliuses Ledebouri* and *pumilus yunnanensis*. Cut sprays of *Fremontia californica* and *Magnolia parviflora* also made vases of interest. (Silver-gilt Banksian Medal.)

Messrs. BARR AND SONS, The Nurseries, Taplow, showed a distinctive group, principally of bulbous plants, but not without its border and rock garden subjects. *Lilium elegans Leonard Joerg* and *Star of Hensden* are fine forms. *Iris fulva* was well flowered. We noted an immense head of the very rare *Allium giganteum* and several bold masses of *Delphiniums* and *Astilbes*. In another tent a good group of Japanese trained pigmy trees was shown, full of life and character in spite of their age. (Silver Banksian and Bronze Flora Medals.)

Mr. CLARENCE ELLIOTT, Six Hills Nurseries, Stevenage, in a pleasing group of Alpines, made a special study of *Campanulas*. *C. pusilla* *Miss Willmott*, *C. pulloides*, *C. Raddeana*, *C. pulla lilacina*, *C. linifolia*, *C. encisa*, *C. Stevenii*, *C. Stevenii alba*, *C. larnica*, by no means exhausted the list, and showed what a rich group of late-flowering Alpines the Bell Flowers are. *Ostrowskia magnifica* was also shown in a way to make the average grower envious of such success in its cultivation. (Silver Banksian Medal.)

Messrs. PULHAM, Newman Street, London, showed a small collection of herbaceous and Alpine plants. *Campanula Raddeana* was noticeable, and a pretty form of *Orchis maculata* among a number of other good plants.

Messrs. W. ARTINDALE AND SON, Nether Green Nurseries, Sheffield, showed *Violas* finely on show stands, with a few *Delphiniums* and *Lilies*, and in front of the group vases of such plants as *Campanula glomerata superba*. (Bronze Flora Medal.)

Mr. W. WELLS, Jun., Merstham Nurseries, Surrey, staged a collection of hardy plants, in

cluding a number of good Delphiniums, the pretty little *Helianthemum* (*Cistus*) *algarvense*, and *Antirrhinum* *Nelrose*. (Silver Banksian Medal.)

Messrs. RICH AND CO., Bath, showed a rich-flowered mass of hardy herbaceous plants, *Phloxes*, *Gaillardias*, *Delphiniums*, *Salvias*, and the charming pink *Lavatera* *Olbia*.

Messrs. A. A. WALTERS AND SON, Bath, in a mixed collection of herbaceous plants, made a feature of the admired and now well-known Delphinium *Rev. E. Lascelles*. *Gaillardias* and *Phloxes* were also shown well.

Messrs. G. STARK AND SON, Great Ryburgh, showed their early-flowering—and long-flowering understood—strain of *Kniphofias*.

Messrs. J. CHEAL AND SONS, LTD., Crawley, showed Alpine and herbaceous plants on tabling. *Sidalcea malvaeflora* and *S. Listeri*, *Linum flavum*, *Erythraea diffusa* and *Verbena chamaedryoides* made bright pieces of colour (Bronze Flora Medal.) In another tent this firm had an interesting collection of cut sprays of flowering shrubs. (Silver-gilt Banksian Medal.)

Mr. T. H. GAUNT, Farsley, Leeds, showed a number of small rock plants. *Campanula hni-folia* is a pretty little species 6 inches high, with violet-blue nodding bells. *Thymes* and dwarf *Conifers* were also included.

Messrs. B. LADHAMS, LTD., Shirley, in a group distinctive in its choice of good herbaceous plants, gave special attention to strains of *Gaillardias* and garden *Pinks*. The pale yellow *Gaillardia* *Sulphur Gem* was particularly pleasing. *Erigeron* B. Ladhams, the new pink *Erigeron*, an invaluable plant for cutting, was included, and the seldom-seen *Salvia superba* (*S. Sclarea* × *S. turkestanica*) in its best and most showy form. (Silver-gilt Banksian Medal.)

Messrs. WHITELEGG AND PAGE, Chislehurst, had a showy group of hardy border and rock garden plants. The collection of Delphiniums was a good one. The annual *Silene Armeria* attracted much notice with its large rose-purple heads, and there were good plants of *Campanula* W. H. Paine, *Lippia repens*, and *Erigeron hybrida rosea*. *Verbena chamaedryoides*, which everywhere seems to have come well through the winter, made perhaps the brightest patch of colour in the group. (Silver Banksian and Bronze Knightian Medal.)

Mr. FRANK LILLEY, St. Peters, Guernsey, staged early-flowering *Gladioli* with some fine *Sparaxis pulcherrima* and its pretty pink variety *Early Bell*. (Bronze Flora Medal.)

Mr. W. MUIR, Baronhill, Linlithgow, showed the new white *Erigeron* *Edina*.

The Misses HOPKINS, Mere, Shepperton, showed an interesting collection of rock and herbaceous plants.

Messrs. THOMSON AND CHARMAN, Bushey, Hertfordshire, in a considerable group of hardy plants, gave special place to the newer Delphiniums. Their lesser known plants included the lovely *Lilium regale* and the difficult scarlet *Gilia coronopifolia*. (Silver-gilt Flora Medal.)

The GUILDFORD HARDY PLANT NURSERY, Guildford, staged cut shrubs and herbaceous plants with some charming dwarf Alpines. (Silver Banksian Medal.)

Mr. JAMES MACDONALD, Harpenden, in a series of grasses for general horticultural purposes, included some of the more ornamental species. Those who rely solely on *Dactylis glomerata* as an edging grass would find *Glyceria spectabilis* fol. variegata and *Arrhenantherum bulbosa* variegata good substitutes, whilst for the border, *Hordeum jubatum* and *Elymus giganteus* are very handsome. (Silver Flora Medal.)

Mr. AMOS PERRY, Hardy Plant Farms, Enfield, showed in an unrivalled way the value of bold masses of a few things. One portion of the group was devoted to hardy Ferns, the other portion was dominated by its *Lilies* and Delphiniums, although many other good plants were included. *Lilium Parryi*, *L. Roezlii* and *L. parvum* *luteum* were particularly lovely. The *pardalinum* Red Giant and *Burbankii*, *Martagon album*, *canadense* and the rare *Bolanderi* and *maritimum* were also shown in vigorous health. One other plant we must not overlook was the large-flowered white form of *Campanula lactiflora*. A strain of garden *Pinks* and *Water Lilies* in bowls represented other of this house's specialities. (Silver-gilt Flora Medal.)

Messrs. BLACKMORE AND LANGDON, Tiverton Hill Nurseries, Bath, staged one of the choicest sets of new Delphiniums—the soft mauve *Statuaire Rude*, the mauve black-eyed *Chantry Queen*, the heliotrope *Lavanda* and deep violet-purple *Dusky Monarch* conspicuous among them. (Bronze Flora Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants, showed one of the richest and brightest collections of hardy plants, full of good things. *Poterium tennifolium* *album*, with catkin-like nodding heads of pure white, and *Poterium obtusatum*, with fuzzy pink fingers, were two particularly good novelties. *Rodgersia pinnata rosea*, *Hemerocallis Baronii*, *Linaria vulgaris* *Peloria*, and some marvellous little pots of *Campanula Raineri* quite smothered in flower also attracted special attention. (Silver-gilt Flora Medal.)

Messrs. G. BUNYARD AND CO., Royal Nurseries, Maidstone, showed herbaceous plants well. Delphinium *Queen Mary*, a large, pale-blue single with white eye, made an effective centrepiece. Bold masses of Delphinium *Rev. E. Lascelles* and *The Alake* filled right and left. *Liliums Hansonii* and *croceum*, *Pentstemons digitalis* and *Southgate Gem*, *Scabiosa caucasica pallida* and *Erigeron Edina* made other notable bunches. (Silver-gilt Banksian Medal.)

Messrs. H. J. JONES, LTD., Ryecroft Nurseries, Lewisham, showed their fine strain of Canterbury Bells, and the largest and most representative collection of *Phlox decussata*. (Standard Cup.)

Messrs. G. JACKMAN AND SONS, Woking Nurseries, Surrey, showed herbaceous plants effectively. In addition to the Delphiniums, in which *Capri* (palest blue), *Somerset* (pale blue, black eye) and *Lord Rosebery* (deep purple) were conspicuous, fine masses of bold colour were gained from *Salvia virgata nemorosa*, *Lythrum Rose Queen*, *Helenium cupreum* and *Oenotheras*. (Silver Flora Medal.)

Messrs. HARKNESS AND SONS, Bedale, Yorks, made a feature of their new large-flowered hybrid *Verbascums*, in yellow and coppery shades of yellow; and their *Gaillardias*, which now range from wholly yellow to almost wholly red, in the large-flowered sorts. (Silver-gilt Flora Medal.)

Messrs. WATERER, SONS AND CRISP, Liverpool Street Arcade, E.C., arranged a pleasing group of hardy plants grouped round an oblong pool of *Water Lilies*. At the edge *Spiraea digitata nana*, *Santolina pinnata* and the double *Tunica* were good; behind were Delphiniums, *Verbascums*, *Phloxes*, and other good border flowers. (Silver-gilt Banksian Medal.)

Messrs. J. PIPER AND SONS, LTD., Bayswater, linked up a rock garden with an informal water garden and collection of herbaceous plants. Bright patches of colour in the rock garden were given by *Verbena chamaedryoides*, *Patrinia palmata* and *Gentiana frigida*. *Primula capitata* and *Pratia angulata* made a pleasing association in a small separated bed. The water plants were dominated by the *Irises*, and fine masses of both *Kaempferi* and *aurea* were included, but *Astilbes*, *Phloxes* and Delphiniums also found place. (Silver-gilt Banksian Medal.)

Messrs. BAKER'S, LTD., Codsall, Wolverhampton, devoted the bulk of their group to Delphiniums, in which of new and old varieties they showed a fine collection. The semi-double blue *Harry Smethan* and the rich purple *Edwin Beckett* were notable among the newer kinds. *Yvette Guilbert* still holds its place among the pale blues. *Pendrill* is a good creamy white, with dark eye-blotch which stood out well. A few rock plants occupied one end, and *Heucheras*, *Lavateras*, *Erigerons*, and *Campanulas* were well shown in the foreground of the main group. (Bronze Flora Medal.)

Messrs. R. WALLACE AND CO., Colchester, divided their exhibit into three portions. A magnificent collection of late-flowering *Eremuri*, which Sir Harry Veitch described at the Press Lunch as "the largest and finest collection that had ever been shown," occupied one end. They were derivatives mostly from *E. Bungei* and *E. Olga*, the types of which were included, but many of the seedlings showed greater vigour than either, and the range of colour ran from pure white (*White Queen*) through primrose, bright yellow, soft pink and salmon pinks to buffy-orange; 200 spikes were included. The

opposite extremity was devoted to herbaceous plants. *Hemerocallis Golden Bell*, *Lilium Szovitzianum* and other *Lilies* gave bright touches of colour among the Delphiniums. Linking these two exhibits were a small informal garden of Japanese *Irises* bordering a stream, and a small formal garden mainly of old-fashioned plants, which showed with taste and admirable effect such quieter use of hardy plants as would actually be made in the garden. The little pool in the latter was given over to new *Water Lilies*—*Escarboucle* most intense of all in colour; Mrs. Richmond, soft pink; *Masaniello*, rose-pink; and many others. The rock walling and simple planting here found many admirers and note-makers. (Large Silver Cup and two Gold Medals.)

Messrs. PAUL AND SON, Cheshunt, staged a good collection of flowering shrubs and trees of interest for their flowers or fruits. *Stephanandra flenuosa*, *Pavia californica*, *Pyrus Vilmoriniana*, *Spiraeas* and *Kerrias* we noted as of special interest. (Silver-gilt Flora Medal.)

Messrs. CARTER, PAGE AND CO., London Wall, were awarded a Bronze Flora Medal for *Dahlias* and *Violas*.

EXHIBITS IN THE OPEN.

Mr. G. REUTHE, Keston, arranged a small rock garden on tabling in the open, close planted with *Heaths*, dwarf *Conifers*, and some good plants of *Acantholimon venustum*, *Allium pedemontanum*, *Campanula Raddeana* and *Umbilicus* (*Sedum*) *sempervivoides*. Near by he included a collection of rare shrubs in pots, particularly rich in the Himalayan *Rhododendrons*, with plants of *Leptospermums*, *Lomatia*, *Daphniphyllum* and many other little-known genera. (Silver Flora and Silver Banksian Medals.)

Mr. ERNEST DIXON, Putney and Wimbledon, carried out a small sunk garden scheme which gave opportunities for the use of dry-walling, sundial and garden figures. It showed how details lend completeness to a design.

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey, made a feature of his rich collection of tree *Ivies*. He showed well, too, the old-fashioned *Erythrina Crista-galli*, which he is making a favourite again. *Acer*, *Fagus*, in various forms and flowering shrubs in pots were also included, as well as some large specimen *Cordylins australis*, as standards. (Standard Cup.)

Messrs. JOHN FORBES, LTD., Hawick, staged *Phloxes*, Delphiniums, *Violas*, and his well-known strain of florists' *Pentstemons*.

The DONARD NURSERY COMPANY, Newcastle, Co. Down, showed a collection of little-known shrubs, including *Gnevinia* and *Cordylina indivisa vera*, but the most interesting and best-represented genus was *Leptospermum*, of which several good plants were included of *L. Nicholii*, *L. Chapmanii*, and *L. Boscawenii*. (Silver-gilt Flora Medal.)

Messrs. J. PIPER AND SONS, Bayswater, made an exhibit of a collection of trimmed new and Box. (Bronze Flora Medal.)

Messrs. W. FROMOW AND SONS, Sutton Court Nurseries, Chiswick, showed a representative collection of their wonderful forms of Japanese Maples. The drought, however, seemed to have treated them unkindly, and though full of interest, the group was more lacking in vigour of colour than is usual. (Large Silver Cup.)

Messrs. W. CUTBUSH AND SONS, Highgate, made their usual exhibit of the trimmed trees. (Silver-gilt Flora Medal.)

'Orchid Committee.

Present: Sir Harry J. Veitch in the chair, and Messrs. Jas. O'Brien (hon. secretary), Pantia Ralli, Gurney Wilson, R. Brooman White, T. Armstrong, J. E. Shill, W. Thompson, A. Dye, J. Cypher, W. Bolton, F. Sander, W. H. Hatcher, A. McBean, Stuart Low, R. G. Thwaites, W. H. White, C. Cookson, W. Cobb, R. A. Rolfe, J. Wilson Potter and C. J. Lucas.

AWARDS.

FIRST-CLASS CERTIFICATES.

Odontoglossum Georgius Rex (parentage unrecorded), from J. GURNEY FOWLER, Esq., Brackenhurst, (unbridge Wells (gr. Mr. J. Davis). A grand hybrid, with a branched spike of twenty-eight fine white and claret-purple flowers. (See Groups.)

Cattleya Warszewiczii Mrs. E. Ashworth, from Messrs. CHARLESWORTH AND CO., Hayward's

Heath. One of the most distinct and delicately tinted Cattleyas. The flowers are uniform blush-pink, slightly darker on the front of the broad labellum, which has a pale yellow disc. Mr. E. Ashworth first flowered and showed it in 1897, when it secured an Award of Merit.

AWARD OF MERIT.

Laelio-Cattleya Fascinator-Mossiae var. *Moonlight*, from Messrs. CHARLESWORTH AND CO., Hayward's Heath. One of the most attractive of white Laelio-Cattleyas, the colour being of a peculiar silvery white, a slight tinge of pink appearing only on the backs of the sepals.

Cattleya Mendelii Mrs. Smee, from Sir JEREMIAH COLMAN, Bart. (gr. Mr. Collier). One of the best forms of the best old type, the rich rose-crimson of the front of the lip being very attractive.

Cattleya Paula (Clarkiae × *Dowiana aurea*), from Messrs. J. and A. McBEAN, Cooksbridge. A pretty hybrid, with rose-coloured sepals and petals slightly tinged with yellow; lip deep maroon with gold lines from the base.

THE GROUPS.

The groups occupied the central staging in No. 2 tent, being arranged on each side.

At the entrance on one side on a separate stage stood Mr. J. GURNEY FOWLER's grand exhibit, *Odontoglossum Georgius Rex*, probably the finest single specimen *Odontoglossum*, both for the quality of its flowers and its grand culture, ever staged. This superb hybrid of unrecorded parentage was raised by Messrs. Charlesworth and Co., who showed it in its early stage, May 20, 1913, when it received an Award of Merit, and passed to Mr. Gurney Fowler's collection, where it has developed in the most extraordinary manner. The plant had enormous pseudo-bulbs, and a very strong spike bearing twenty-eight blooms, each $4\frac{1}{2}$ inches across, and of fine shape and substance; white, heavily marked with rich claret-purple. A First-class Certificate and Lindley Medal for Culture was awarded. A fine specimen of *Odontodia Cooksoniae* Fowler's variety, with scarlet flowers with white margin, and which had previously received a First-class Certificate, was staged with it.

ELIZABETH LADY LAWRENCE, Burford (Orchid grower Mr. Swindon), sent cut spikes of varieties of *Cypripedium Stonei*, the unique variety *platytenium* being still the most remarkable.

PANTIA RALLI, Esq., Ashted Park, Surrey (gr. Mr. Farnes), showed *Cattleya Eros*, a pretty light-coloured *Cattleya* of unrecorded parentage, with distinct traces of *Cattleya Mossiae*. The plant resembled a light form of *C. Empress Frederick*, and had a very sweet perfume. It is a very attractive flower, and desirable as a late summer flowerer.

Sir JEREMIAH COLMAN, Bart., Gattton Park (gr. Mr. Collier), who was the only amateur exhibitor of a group, staged a very effective display, the elevated middle at the back being of *Laelio-Cattleya Aphrodite*, etc., in front of which were the yellow and purple *L.-C. Hippolyta Phoebe*, some good *Odontoglossums*, and along the margin many interesting species. At the back were elegant *Oncidiums* and *Epidendrum Bonndii*, and at the sides masses of bright scarlet *Odontodia* with several forms of the pretty *O. Papilio gattonense*. Very interesting in the group were several of the best old forms of *Cattleya Mendelii*, including Mrs. Smee, Quorn House, and Duke of Marlborough, still retaining their place for good quality. Among the forms of *Cattleya Warscewiczii* the variety *King Edward VII.* was one of the richest dark forms. *Zygopetalum Roeblingianum* was also well shown. (Gold Medal.)

MESSRS. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells, staged a very fine group, in which a prominent feature was the excellent forms of *Cattleya Warscewiczii*, ranging from the best dark forms to the charming *C. Warscewiczii* Virgin Queen, pure white with violet-purple lip and white margin. With them were some very bright *Odontodas*, the best scarlet being *Oda. Chantecler* Orchidhurst variety, which had previously secured a First-class Certificate. In front was a selection of handsome blotched *Odontoglossums* of great promise, flowering for the first time: *Cypripedium Daisy Barclay*, *C. Phoebe* and *C. Chamberlainianum*

magnificum, *C. Lawrenceanum* Hyeannum and *C. Maudiae*. (Standard Cup.)

MESSRS. CHARLESWORTH AND CO., Hayward's Heath, had a fine group in which their famous strain of hybrid *Miltonias* was the salient feature. The forms of *Miltonia Charlesworthii*, with their fine sprays of light rose-pink flowers, with large dark maroon masks, were the best. The quality of the *Odontoglossums*, *Odontodas*, etc., was good throughout, and specially remarkable things were the beautiful blush-tinted *Cattleya Warscewiczii* Mrs. E. Ashworth; the singular bizarre *C. W. marmorata*, with rose-flaked sepals and petals; *Laelio-Cattleya Fascinator-Mossiae* var. *Moonlight*, one of the finest white *Laelio-Cattleyas*; *Odontoglossum crispum virginale* Madonna, an imported pure-white form of the best quality; and *Laelio-Cattleya Martinii* The Czar, a grand flower of fine colour. The *Odontodas* *Charlesworthii*, *Brewii*, and *Chantecler* showed up remarkably well with their rich red tints. (Silver Cup.)

MESSRS. SANDER AND SONS, St. Albans, had an extensive group of *Laelio-Cattleyas*, *Odontoglossums*, *Miltonias* and other showy Orchids of the season. Among the *Miltonias*, two specimens of *M. Sanderiae*, with pretty pink flowers with very claret-coloured masks to the lip, were very fine. Among the *Laelio-Cattleyas*, the forms of *L.-C. Canhamiana* and *Aphrodite* were excellent, *L.-C. Isabel Sander*, *L.-C. brugense* and *L.-C. Gloriosa* very distinct, and hybrid *Cattleyas* and *Brasso-Cattleyas* well represented. Among other remarkable features were a selection of forms of *Anguloa Cliftonii*, varying in colour, the darkest being in tint near to *A. Ruckeri sanguinea*, but very different in shape. *Cirrhopetalum robustum* was a grand specimen, with three spikes, *Aërides Houlettianum* Sanderiae, an albino of the species, and *Diacrium bicornutum* and other species rarely shown were well represented. (Silver-gilt Cup.)

MESSRS. MANSELL AND HATCHER, Rawdon, Yorks, had one of the best and best-arranged groups, the elevated centre of about thirty specimens of the large white *Phalaenopsis Rimestadiana*, gracefully arching forward, being a fine feature. *Odontoglossums*, *Laelio-Cattleyas*, *Cattleyas* and *Odontodas* were in profusion, and good, the best noted being the new *Odontodia Prince of Wales* (Ernestii × *Charlesworthii*), with rose flowers having a deeper rose-purple margin; *Odontoglossum Evelyn* (crispum-*arrayanum* × *Phoebe*), a pretty flower of medium size, white with claret marking. Three elegant specimens of *Platyclinis filiformis*, with pretty drooping spikes of yellow flowers, *Paphiinia cristata* and other rare plants were included. (Gold Medal.)

MESSRS. FLORY AND BLACK, Slough, had an elegant group, the centre and two ends being principally of fine *Laelio-Cattleya Canhamiana* and *Aphrodite*. In the intermediate spaces groups of the elegant *Disa Luna*, with its tall sprays of rose and white flowers, had a charming effect, and also in the group were the new *Disa Blackii* and its scarlet parent *D. grandiflora*. Two plants of a very fine white form of *Cattleya Gaskelliana*, some well-flowered *Odontoglossum grande*, and other *Odontoglossums*, *Odontodas*, etc., and a selection of good *Cypripediums*, were also noted. (Large Silver Cup.)

MESSRS. STUART LOW AND CO., Jarvis Brook, Sussex, staged a good group, in which their fine strain of *Laelio-Cattleya Aphrodite* were remarkable, the best being named *Rex*, *grandis*, and *Mercury*. The forms of *Cattleya Warscewiczii* were also good, the best noted being the variety *majestica*, good in shape and colour. The end of the group was of white *Phalaenopsis* and red *Renanthera* and *Laelia tenebrosa* Walton Grange, and some good *Odontoglossums* were noted, also *Vanda coerulea*. (Standard Cup.)

Mr. C. F. WATERS, Balcombe, staged an effective group of *Cattleyas*, *Laelio-Cattleyas*, *Odontoglossums*, etc., an interesting plant in the collection being a yellowish *Lissochilus* from Africa. (Silver Banksian Medal.)

Mr. HARRY DIXON, Wandsworth Common, had a very effective group of *Odontoglossums*, *Cattleyas*, *Laelio-Cattleyas*, etc., his *L.-C. blechleyensis* Emperor being a noble flower. *Odontoglossum ardentissimum* xanthotes and some *Odontodas* were specially good. (Silver Flora Medal.)

MESSRS. J. AND A. McBEAN, Cooksbridge, in their very effective group of *Odontoglossums*, *Cattleyas*, *Odontodas*, etc., had several very interesting novelties, including *Cattleya Paula* (see Awards), and *Laelio-Cattleya Emmeline* (L. anceps *Schröderae* × *C. Whitei*), and their famous strain of *Odontodia Charlesworthii* showed this large red variety at its best. (Silver-gilt Flora Medal.)

(To be continued.)

Scientific Committee.

JUNE 22.—Present: Mr. E. A. Bowles, M.A. (in the chair), Sir J. T. D. Llewellyn, Drs. A. Voelcker, A. S. Horne, Prof. G. S. Boulger, Messrs. W. E. Ledger, C. E. Shea, J. Fraser, W. C. Worsdell, E. M. Holmes, J. Ramsbottom, A. Worsley, J. T. Bennett-Poe, and F. J. Chittenden (hon. sec.), with W. R. Dykes (visitor).

The late Dr. Hugo Müller.—The Chairman expressed the deep regret the Committee felt at the death of Dr. Hugo Müller, F.R.S., who was for so long a member of the Scientific Committee, and whose kindly courtesy and ready assistance had been of the utmost value. The secretary was instructed to convey the sympathy of the Committee to Mrs. Müller in her bereavement.

Culinary Mints.—Mr. A. Worsley showed a specimen of *Mentha viridis* var. *a* (Smith) which had previously been before the Committee, and some discussion took place upon the relative values of the various Mints for culinary purposes. It was resolved to collect together as many forms as possible for comparison.

Fasciation, etc.—Mr. J. Fraser showed a fasciated *Polyanthus*, with a stem about 1 in. in diameter, and a Rose with branching huds in its centre.

White *Meconopsis Wallichii*.—Sir J. T. D. Llewellyn showed flowers of a perfectly white-flowered seedling of *Meconopsis Wallichii*. This plant is variable in the shade of blue of its flowers, but white varieties appear to be very uncommon.

Angraecum armeniacum?—Mr. J. Hudson, V.M.H., sent a plant which he had been growing for about twelve years from the Chiswick collection which had now flowered, and proved to be either *Angraecum armeniacum* or a close ally. It has axillary spikes about $2\frac{1}{2}$ in. in length of concolorous apricot-yellow flowers. The plant was sent to Wisley.

Sporting in Orchid.—Mr. G. Wilson showed on behalf of Mr. R. G. Thwaites flowers from two spikes of *Laelio-Cattleya* × *Canhamiana* var. *Lady Wigan*. The plant was divided while the flowers were in the bud state, and while one portion had produced normal flowers, the other had flowers showing considerable suffusion of purple on all the segments. There was nothing to show whether the variation had arisen before or after division of the plant.

Gummosis in Cherry.—Prof. G. S. Boulger showed a branch of Cherry which had been attacked by "gummosis," probably the result of invasion by a bacillus, through a wound where the disease had evidently started.

Echeveria setosa.—Mr. W. E. Ledger showed a flowering plant of this rare Mexican species, which produces large rosettes of setose leaves and very bright flowers on stems about 9 in. or 10 in. in height. It was recently described and figured by J. N. Rose in *Contributions from the U.S. Herbarium*. A Botanical Certificate was unanimously recommended for this plant.

Iris filifolia (see fig. 8).—Mr. W. R. Dykes showed flowers of the rare (true) *Iris filifolia*. It differs from the plant in common cultivation under that name (which is a form of *Iris Niphium*) in having a distinct perianth tube. It has beautiful purple flowers, with a broad yellow, blue-edged band down the middle of the outer segments.

Castilleja sp.—Mrs. Longstaff, of Wimbledon, showed a good and well-flowered spike of *Castilleja miniata*, which was now flowering in her garden for the third time, from seed collected in British Columbia. She believed it to be parasitic, in her garden, upon a species of *Saponaria*. It was referred to Dr. Rendle for identification.

Floral malformations.—Mr. E. Mann, of Charters Towers, Queensland, sent some further

floral malformations from his well-manured garden, which had passed through a dry season with a high temperature (100° shade). There were well-marked examples of "hen and chickens" Zinnias and a proliferous Gomphrena. He had previously sent proliferous and virescent examples of several other plants.

Double Apple flowers.—Mr. H. M. Eddie, of Kerrisdale, British Columbia, wrote concerning some flowers on young Apple having double flowers of remarkable size, being 3 in. in diameter, and with 23 to 30 petals each. It will be interesting to see whether the doubling is maintained as the plants become older, for it is not unusual thing for young Apple trees to produce double flowers, but as the trees get older to produce only single ones.

ROYAL AGRICULTURAL.

HORTICULTURAL EXHIBITS AT NOTTINGHAM.

JUNE 29-JULY 2.—The great agricultural exhibition of the year, "The Royal," as it is best known in the farming world, was held on these days at Nottingham. Of late years a special section at these shows has been devoted to horticulture, and seeing that farming and gardening are twin sisters, there is some little excuse, if any were needed, for utilising the driving power that flowers have on the general public. The garden exhibits were staged in a special tent, and horticulture was honoured by a schedule of its own, containing twelve classes, all for flowers and plants. The prizes offered were liberal: for a group of miscellaneous plants in or out of bloom there were three prizes of the aggregate value of £75. The 1st prize was won by Messrs. J. CYPHER AND SONS, Cheltenham, who were followed by Mr. W. A. HOLMES, Chesterfield, with Messrs. SIMPSON AND SONS, Selby, 3rd. Messrs. CYPHER AND SONS were the only exhibitors in a class for collections of Orchids, consisting of Miltonias, Cattleyas, Laelio-Cattleyas, Dendrobiums, Cypripediums, Vandas and others, the flowers being relieved by the free use of Adiantum Fern, Cocos Weddelliana and Codiaeums (Crotons). Messrs. BLACKMORE AND LANGDON easily won the 1st prize for a group of tuberous-rooted Begonias in pots. Their collection was well staged against a background of Adiantum. In the class for Delphiniums the same firm was successful in obtaining the 1st prize. For a group of hardy plants and cut flowers Messrs. W. ARTINDALE AND SONS, Sheffield, were awarded the 1st prize. The flowers were of good quality, but the group was rather heavy in appearance. The group of hardy plants arranged by the same firm round pools of water was artistic and was awarded the 1st prize. In the Carnation class for a collection of cut blooms occupying a space of 12 feet by 5 feet, the 1st prize was won by Mr. C. H. TAUDVIN, Cheltenham. The 1st prize of £5 for Sweet Peas was obtained by Lord NORTH, Wroxton, Banbury (gr. Mr. E. R. Janes). In the Rose class, Mr. THOS. ROBINSON excelled and Messrs. W. J. BROWN followed.

Non-Competitive Exhibits.—In the centre of the stand occupied by Messrs. SUTTON AND SONS, Reading, was a collection of Sweet Peas, those of dark colours being especially good. A collection of seasonable vegetables completed the exhibit. Of these, Cabbage Lettuce Matchless, Cauliflower Snow Queen, Tomatos Best of All, Eclipse, Satisfaction, Winter Beauty, Abundance and Magnum Bonum were particularly fine, and there were also Peas in great variety. (Large Gold Medal.)

Messrs. J. CARTER AND Co., Raynes Park, also surrounded their agricultural exhibit with flowers and vegetables. The flowers were especially abundant and brightened an otherwise rather sombre collection of roots and seeds. The Sweet Peas, Verbenas, Irises and Lilies were particularly worthy of note, as also were the flowering specimens of Spiraea, Hydrangea and Primula and cut flowers of Sweet Peas. (Large Gold Medal.)

Messrs. E. WEBB AND SONS, Stourbridge, staged a collection of Melons; also well-flowered Gloxinias and Double Begonias.

Messrs. DICKSON'S, Chester, showed a collection of cut flowers—Irises, Delphiniums, Lilies and others.

On the stand of Messrs. DICKSON AND ROBINSON, Manchester, seedlings of agricultural plants mingled not ungracefully with specimens of Roses (Orleans, Jessie and Mrs. Cutbush), Irises, Lilies, Carnations and Gladioli. (Large Gold Medal.)

A group of Roses exhibited by Messrs. A. DICKSON AND SON, of Newtownards, was awarded a large Gold Medal, the varieties Donald McDonald, Red Letter Day, Irish Fire-flame, General McArthur and Lady Pirrie being especially fine. A Gold Medal was also awarded to Mr. WILLIAM LOWE, Beeston, Nottinghamshire, for a group of Roses, including among others Warrior, Mme. Jules Graveraux, Frau Karl Druschki, and Mme. Mélanie Souper Yellow Stone.

Messrs. JOHN WATERER, SONS AND CRISP, of Bagshot, were represented by a group of ornamental shrubs, chiefly Acers and Conifers. The background of the group was relieved by a number of Rhododendrons and Rose trees. (Large Gold Medal.)

Messrs. H. B. MAY AND SONS showed a collection of indoor Ferns. Messrs. T. ROBINSON, Nottingham, were awarded a Gold Medal for an exhibit of Roses comprising good blooms of Ethel Malcolm, Mme. Edouard Herriot, Mme. Mélanie Souper and General McArthur.

Messrs. DOBBIE AND Co., Edinburgh, obtained a large Gold Medal for a collection of Sweet Peas.

Messrs. ALLWOOD BROS., Haywards Heath, sent a collection of Carnations, including several novelties such as Wivelsfield White and Bishton Wonder (this last somewhat recalling Mikado).

THE KING'S ACRE NURSERIES, LTD., Hereford, had an exhibit opposite the entrance to the show, consisting of a group of fruit trees in pots loaded with fruit, including Peaches, Nectarines, Figs, Apples, Pears, Gooseberries and Currants. Some of the Nectarines (Early Rivers and Cardinal) were trained in umbrella form. One tree of Peregrine Peach and a Lady Sudeley Pear were especially remarkable for the quality of the fruit.

THE STUDLEY (WARWICKSHIRE) HORTICULTURAL COLLEGE FOR WOMEN showed a collection of vegetables which was awarded a Gold Medal. Their collection of fruits, including good Peaches, obtained a Silver Medal.

Near the entrance to the exhibition were arranged the exhibits of several firms. Messrs. LITTLE AND BALLANTYNE, Carlisle, showed decorative Conifer seedlings, flowering plants of Fuchsia, Hydrangea and ornamental shrubs with variegated foliage. The stand of Messrs. DICKSON, BROWN AND TAIT, Manchester, was tastefully decorated with fine specimens of Nephrolepis, Hydrangeas in variety, Perpetual-flowering Carnations and Roses.

ROYAL METEOROLOGICAL.

JUNE 16.—At a meeting of the Royal Meteorological Society, held on the 16th ult., Professor H. H. TURNER, F.R.S., gave an account of an investigation upon which he has been engaged for some years, and which has recently assumed a new character in which it promises results of immediate interest to meteorologists. He finds that meteorological history is divided into "chapters," averaging 6½ years long, with abrupt changes (or "discontinuities," as he calls them) between. The dates of change are apparently settled by the movement of the earth's axis. They oscillate about mean positions in a cycle of 40.5 years, which appears in Brückner's collected "cold winters" for 800 years; in Nile flood records for 1,000 years; and in measures of Californian tree rings for 520 years. The chapters are alternately hot and cold, wet and dry, as shown by rainfall and temperature records at Greenwich, Padua, and Adelaide.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JUNE 17.—Committee present: R. Ashworth, Esq. (in the chair), Messrs. J. C. Cowan, J. Cypher, J. Evans, P. Foster, A. Hamner, J. Lupton, D. McLeod, F. K. Sander, W. Shackleton, S. Swift, H. Thorp, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Cattleya Mossiae Wageneri Baron Schröder variety, sepals and petals white, lip with pronounced yellow markings; *C. Sybil* var. *R. Ashworth*; both shown by R. ASHWORTH, Esq. *Cypripedium Curtisii* Sanderae (the albino of the type), exhibited by S. GRATRIX, Esq.

Cattleya Mossiae pleasingtonense, sepals and petals white, lip with yellow lines in the throat; exhibited by T. BUTLER, Esq.

AWARDS OF MERIT.

Odontoglossum Cobbiae Ashlands var. (Pescatorei Charlesworthii × amabile), *O. Lambaeanum* var. *Lord Kitchener*, and *O. ardentissimum expansum*, all shown by R. ASHWORTH, Esq.

Cattleya Thurgoodiana Haddon House var. (speciosissima × Hardyana), from P. SMITH, Esq.

CULTURAL CERTIFICATES.

To Mr. E. ROGERS, for a plant of *Phalaenopsis Rimestadina*, with a branched spike carrying 46 flowers (a Bronze Medal was also awarded).

O. O. WRIGLEY, Esq., Bury (gr. Mr. E. Rogers), staged fine specimens of *Coelogyne pandurata* and *Phalaenopsis Rimestadina*, a Cultural Certificate and Bronze Medal being awarded the gardener for the latter plant.

GROUPS.

The following medals were awarded for groups:—*Silver-gilt Medal* to Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton).

Large Silver Medals to R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden); A. HAMNER, Esq., Chester (gr. Mr. B. Wilson).

Silver Medals to S. GRATRIX, Esq., Whalley Range (gr. Mr. W. W. Field), Messrs. CYPHER AND SONS, Cheltenham, Messrs. SANDER AND SONS, St. Albans, and Messrs. HASSALL AND Co., Southgate.

CROYDON HORTICULTURAL.

JUNE 23.—At the Park Hill Recreation Ground, Croydon, the forty-eighth summer show of the above society took place on the 23rd ult., and it was attended with unqualified success. For many years the Croydon Show has been noted for the excellence of its Rose exhibits, and this reputation was enhanced by the exhibits of this year.

OPEN CLASSES.

The 1st prize in the Championship Rose Class, which carries the Lady Edridge Challenge Cup, was won by Messrs. B. R. CANT AND SONS, Colchester, with 48 splendid blooms. Of these perhaps the crimson varieties were the best, and such flowers as H. V. Machin, Lieutenant Claude, Edward Mawley, J. B. Clark, Gloire de C. Guinoisseau and George Dickson were splendid. Of the pinks Mrs. W. J. Grant, Mrs. Spaul, Mrs. G. Norwood, Elizabeth and Lady Helen Vincent were especially good. Messrs. F. CANT AND Co., Colchester, who won the 2nd prize, had splendid blooms of Maman Cochet, Mrs. T. Roosevelt, Lyon Rose and Ulrich Brunner; 3rd, Messrs. D. PRIOR AND SONS.

The best 24 Roses were shown by Messrs. W. H. CHAPLIN BROS., Waltham Cross. They included in a noteworthy exhibit magnificent examples of Mrs. Maynard Linton, Mrs. C. Russell, Mrs. A. Carnegie, May Miller, and Mrs. W. J. Welsh. In the 2nd prize collection Mr. G. PRINCE, Oxford, had delightful blooms of Lady Barham, George Dickson and Mrs. G. Sawyer. The 3rd prize was won by Mr. H. V. DREW, Longworth.

In the class for trebles of 18 varieties Messrs. B. R. CANT AND SONS won the 1st prize with superb blooms of Lieut. Chauré, Edward Mawley, Augustus Hartmann, Freda St. Heleno and others; 2nd, Messrs. CHAPLIN BROS.; 3rd, Messrs. D. PRIOR AND SONS.

Mrs. Geo. Norwood, shown by Mr. ELISHA HICKS, Twyford, was the best Rose of any one variety, and Lady Ashtown, by Mr. W. R. HAMMOND, Burgess Hill, was the 2nd best.

The class for 9 "New Roses" did not produce many varieties superior to the standard sorts. Mr. ELISHA HICKS won the 1st prize, and included Candeur Lyonnaise, which may be described as being a refined and perfumed Frau Karl Druschki.

There was a keen competition in the class for 18 Teas or Noisette Roses, and here Mr. H. Y. DREW won with wonderfully good blooms of such as Maman Cochet, White Maman Cochet, Mrs. Foley Hobbs and Mme. Constance Soupert; 2nd, Mr. GEO. PRINCE, Oxford.

Garden Roses were shown in a delightful manner. Mr. HICKS, with charming Rayon d'Or and Madame Ed. Herriot, won the 1st prize, and Mr. G. PRINCE was placed 2nd.

AMATEURS' CLASSES.

The Challenge Cup and Silver Medal which constitute the championship of the amateurs' classes was won by Mr. H. L. WETTERN, Waratah, Sanderstead, who had 24 commendable Roses in such sorts as Ed. Mawley, Mrs. J. Laing, H. V. Machin, Lady Ursula and Mrs. M. Linton. Dr. LAMPLOUGH, Earls Colne, Essex, who was placed 2nd, had in his bloom of Lieut. Chauré the Silver Medal Rose.

Dr. PALLETT excelled in the classes for 8 trebles for 18 Tea or Noisette Roses with magnificent blooms of Bessie Brown. Mr. H. L. WETTERN won the 1st prize for 9 blooms of any one variety, and he also led for 6 bunches of Decorative Roses, 5 vases of similar sorts, 12 and 6 blooms and 3 bunches of Decorative Roses in the Local Classes, where Dr. LAMPLOUGH was placed first for 18, 12 and 6 distinct varieties.

Although Roses were the principal feature of the show there were interesting exhibits of groups of miscellaneous plants, specimen stove and greenhouse plants, Ferns, Caladiums, Coleus, Fuchsias and Gloxinias. The chief prize winners were Mr. F. LINK, Homeland; Mr. F. DYER, The Pentlands; and Mr. G. GOODSIR, Wallacefield.

Mr. G. GOODSIR and Mr. A. H. ALLEN, Wandle Court, Beddington, won the 1st prizes for collections of vegetables.

A Silver Medal was awarded to Messrs. LEMON, Bramsfield, Godstone, for a splendid vase of Hercules in a non-competitive exhibit of Sweet Peas.

WINDSOR, ETON AND DISTRICT ROSE

JUNE 26.—The twenty-fourth annual show of the above society was held on the slopes of Windsor Castle on this date. Although the entries were not quite so numerous as last year, which was a record in the annals of the society, they were fully up to the average, and many of the Roses were of great excellence.

For the third year in succession "The King's Challenge Cup" was won by Messrs. B. R. CANT AND SONS.

OPEN CLASSES.

The Championship Class, which includes the King's Challenge Cup, and calls for 48 blooms in distinct varieties, induced great competition. Of the 8 exhibits the best was decidedly that of Messrs. B. R. CANT AND SONS, and this, as at the Croydon and City of London shows, where they had previously also won the chief honours, was particularly strong in the deep red-coloured Roses. Of these King George V., H. V. Machin and Earl of Gosford were magnificent. The blooms of such sorts as Colcestria, Lady Barham, Mrs. W. J. Welsh and the bright scarlet Augustus Hartmann were also splendid; 2nd, Messrs. R. HARKNESS AND SONS, Hitchin; 3rd, Messrs. ALEX. DICKSON AND SONS, Newtownards.

The Roses in the class for 18 Teas or Noisettes were scarcely of equal quality to that in the championship class, but Messrs. F. CANT AND CO., Colchester, won the 1st prize with a grand collection which included charming blooms of Maman Cochet, Mme. C. Soupert and Nita Wettren; 2nd, Mr. H. Y. DREW, Longford.

There were 7 exhibitors in the class for trebles of 12 varieties, and here Messrs. B. R. CANT AND SONS won the chief prize with a noteworthy collection; 2nd, Mr. H. Y. DREW.

Messrs. B. R. CANT AND SONS won the 1st prize in the class for 12 blooms of any H.P. or H.T. Rose, and Mr. H. Y. DREW was 2nd with charming examples of Mabel Drew. The best 12 Tea or Noisette blooms were Mme. J. Graveaux, shown by Messrs. D. PRIOR AND SONS, and the same variety was shown by

Messrs. W. H. BURCH AND SONS, who were placed 2nd.

In the class for 12 blooms of any crimson alternated with 12 of any white Rose of only 2 varieties, the 1st and 2nd prize winners, Messrs. B. R. CANT AND SONS and Mr. H. Y. DREW, in the order named, showed Edward Mawley and Mrs. A. Carnegie.

The Decorative Roses made a good display. Messrs. F. CANT AND CO. were awarded the 1st prize for such sorts as Una, Rayon d'Or, Irish Glory, Warrior and Souv. de Gustave Prat. There was a formality in setting up the vases of the 2nd prize collection, but otherwise Mr. C. TURNER's exhibit of such as Butterfly, Diabolo and Simplicity was perfect.

AMATEURS' CLASSES.

The Windsor Challenge Cup for the best 24 blooms was won by Mr. F. DENISON, the winner in 1913, with a most commendable collection of such sorts as Dean Hole, Mildred Grant, Coronation and a magnificent flower of Oberhofgärtner Terks, which won the Silver-gilt Medal as the best Rose in the show. Mr. H. WETTERN was 2nd. Mr. DENISON also showed the best trebles of 8 varieties which won the 1st Cup, and here Dr. LAMPLOUGH, who showed the best 18 varieties, was a good 2nd.

Mrs. H. Y. BALFOUR won the 1st prize for 12 Teas or Noisettes with a splendid exhibit, of which the outstanding sorts were Alice de Rothschild and W. R. Smith. The best 18 varieties were shown by Mr. J. B. FORTESCUE. In the Local Classes Mr. DIXON DAVIES showed the best 24 blooms.

Hardy border flowers were shown splendidly by the Rev. J. B. SHACKLE and Mr. NORTH won the best prize for Sweet Peas.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JUNE 14.—The monthly meeting of this society was held at the R.H.S. Hall on the 14th ult. Mr. C. H. CURTIS presided. Three members were allowed to withdraw double the amount of interest from their deposit, viz., £4 0s. 8d., £4 8s. 10d., and £4 12s. 6d.; and one member withdrew from his deposit the sum of £10. The sick pay for the month on the ordinary side amounted to £38 9s. 8d., and on the State section to £28 18s. 6d., and maternity claims to £19 10s.

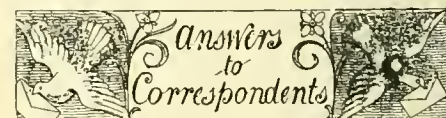
Obituary.

R. H. LOCK.—We record with deep regret the death from heart disease of Mr. R. H. LOCK. Mr. Lock had a distinguished career at Cambridge, and was a Fellow of Gonville and Caius College. On the completion of his scientific studies in England he was appointed Assistant Director of the Botanic Gardens in Peradeniya, Ceylon. He threw himself with energy into the duties of this post, and carried out investigations in the problems of inheritance of plants, in particular Peas, Maize and Nicotiana. Mr. Lock also initiated important improvements in connection with the tapping of Rubber. After a few years, however, when those who knew him were watching his career with interest and high expectation, the news came to England that the authorities in Ceylon had decided to reorganise the Agricultural Department. With a strange ignorance of the essential functions of a tropical botanic garden and an exaggerated estimate of the importance of a purely agricultural station, these authorities decided to dispossess themselves of the services of the Director of Peradeniya, and Mr. Lock's retirement from his post followed. Fortunately the Board of Agriculture in this country had the wisdom to appoint Mr. Lock to its scientific staff, and although the post to which he was appointed was a somewhat modest one, Lock threw himself into his new duties with ardour and success. We believe that the Board appreciated his work highly, and that it had decided just before Mr. Lock's untimely death to appoint him to a more important and congenial post. Mr. Lock, although still young,

had made important contributions to knowledge, and his work on *Recent Progress in the Study of Variations, Heredity and Evolution* is a remarkable testimony to his knowledge and powers of exposition. Therein the difficult problems of heredity are handled with a firmness of grasp which could only be expected of a man of far riper experience. But experience is not, after all, a product of years, but of quickness of apprehension, and in the possession of that latter quality Mr. Lock was peculiarly distinguished.

MICHAEL J. AYLWARD AND JAMES LOCKHART.

—Our contemporary *Horticulture* announces the death of Michael J. Aylward, florist, of Woburn, Mass., at the age of 62. Mr. Aylward was a native of Ireland. Also James Lockhart, florist, aged 81 years. Mr. Lockhart was born in Scotland, and emigrated to America when he was twenty years of age.



APPLE DISEASED: C. A. The old stock is diseased and the fungus is spreading to the new and more vigorous growth. In such cases it is often found that the disease dies out, but if it continues to spread, remove the diseased shoots. There is no other cure.

BURGUNDY WASH FOR PEACH LEAF CURL: C. E. P. (1) Take 2lb. copper sulphate (98 per cent. purity), grind up and dissolve in one gallon of water in wooden vessel. (2) Take 2lb. 5oz. of sodium carbonate (washing soda), grind up and dissolve in one gallon of water. Gradually add 1 to 2 when both solutions are as cold as possible, stirring all the time. Then make up to ten gallons. Spray in February before the buds burst. Spraying presumably stops germination of the spores, and hence the leaves are not attacked. The plan to adopt now is to burn as many diseased leaves as possible.

NAME OF PLANT: A Reader. *Ozothamnus rosmarinifolius*.

PHLOX DYING: J. N. The injury is caused by eelworms. Burn the diseased plants and sterilise the soil in which they have been growing.

POTATOS DISEASED: J. P. The roots of the Potato plants are injured by wireworms. See reply to J. B. in our issue for July 3, page 16.

REMOVING GARDEN PRODUCE: Newbury. Unless your friend had any definite arrangement with his employer, he has no right to remove anything growing in the garden on giving up possession.

ROSE DOROTHY PERKINS: Caltha. The disease is black spot, caused by a fungus. Spray the trees with liver of sulphur. The bleaching of the leaves, about which you inquire, is due to the presence of aphides, and the coloration is due to red cell-sap.

TOMATO FLY: H. D. H. D. Aleurodes (Snowy Fly) infests Tomato plants growing in a warm atmosphere indoors. To destroy the flies vaporise the house occasionally with a nicotine vaporising compound; or, better still, with hydrocyanic acid gas.

WATER CONTAINING EXCESS OF IRON: H. W. Instead of attempting to neutralise the iron, you will do better to make provision for securing a supply of rainwater. In order to determine how best to neutralise the iron it would be necessary for us to know in what form the iron is present. But if this were done, the water would still be much inferior to rainwater for Begonias, Carnations and other such tender plants as those you mention.

Communications Received.—A. H. H. B.—Hon. V. G.—R. M.—R. W. & Co.—R. I. L.—R. O. W.—L. J.—G. M.—Rev. S. H. S.—W. S.—J. B.—A. T.—N. Delta—T. J. M.—G. C. R.—Nurseryman—C. A.—J. H.—J. M.—J. S. H.—R. P.—E. H.—S. A.—W. A. O.—F. M.—A. J. W.—Dr. H. J. E.—C. E. B.—Dr. H. S.—F. F.—W. S. L.—R. G. H.—J. H. R.—T. S. L.

THE

Gardeners' Chronicle

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THE FLOWERS OF MILTON.

IN this paper I propose to deal with the flowers of Milton as I have already dealt in the *Gardeners' Chronicle* with the flowers of Gower, Chaucer and Spenser. I shall quote all the passages in which plant names occur, making the quotations as short as I can, without destroying the description. To these I shall add such short notes as I may think necessary for the identification or illustration of the names.

To the student of old English botany and gardening, the flowers of Milton may not be so interesting as the flowers of the older poets. He does not seem to have the personal contact with the plants he names as the others have; and for this there are two reasons: his blindness and his knowledge of the Greek and Roman Classics.

Of his blindness he has given a most touching account at the beginning of the third book of *Paradise Lost*:

"Thus with the year
Seasons return, but not to me returns
Day, or the sweet approach of Ev'n or Morn,
Or sight of vernal bloom, or Summer's Rose,
Or flocks, or herds, or human face divine;

Presented with a universal blank
Of nature's works to me expunged and ras'd."

The result of his love for the Greek and Roman Classics is that his observations smell of the lamp more than of the open country or garden. Still, I think the study of his plants will not disappoint the student; they have a value of their own, and cannot be passed by altogether.

I have throughout quoted Pickering's 8vo edition in six volumes, 1851. And there are so many biographies of Milton that I have not thought it necessary to

give any history of his life. He was born 1608, six years before the death of Shakespeare, and died in 1674. His life seems to have been a very chequered one, with many pleasures and many sorrows.

ACANTHUS.

On either side
Acanthus, and each odorous bushie shrub
Fenced up the verdant wall.

P. L. VI. 696.

Acanthus here may mean the real Acanthus spinosus, but I think it more likely that he meant any thorny plant that would serve as a fence plant.

AMARANTH.

1. Their Crowns inwove with Amarant and Gold,
Immortal Amarant, a flour which once
In Paradise fast by the Tree of Life
Began to bloom, but soon for man's offence
To heav'n removed, where first it grew, there
grows,
And flow'rs aloft shading the Fount of Life.

P. L. III. 351.

2. Bid Amaranthus all his beauty shed.
Lycidas, 149.

3. From their blissful bow'rs
Of Amaranth Shade. P. L. XI. 78.

As Milton so expressly limits the existence of the Amaranth to Heaven, it is useless to try to fix his Amaranth to any earthly plant.

ANEMONE.

The name Anemone does not occur in Milton, but it is hidden in the following:

A small unsightly root,

The leaf was darkish, and had prickles on it.
But in another country, as he said,
Bore a bright golden flow'r, but not in this soil;
Unknown, and like esteem'd, and the dull swain
Treads on it daily with his clouted shoon

He call'd it Haemony, and gave it me.
Comus, 628.

To me it seems very strange that such a scholar as Milton should have used the change from the Greek *anemone* to the English *anemone*. But he did not invent it; the name was in use in his time and for many years after. In Van Oosten's *Dutch Gardener* (ed. 1703) there are eight chapters on the culture of Anemones, and they are throughout called Anemones. Milton's description of the plant and flower fits no Anemone or any other flowering plant. The N.E.D. says it is "a name given by Milton to an imaginary plant having supernatural virtues," and there we must leave it. It only grew in the poet's brain.

APPLES.

1. Him by fraud I have seduc'd
From his Creator, and the more to increase
Your wonder, with an Apple. P. L. X. 487.

2. That crude Apple that diverted Eve!
P. R. II. 349.

3. The sharp desire I had
Of tasting those fair Apples.
P. L. IX. 585.

The forbidden fruit that Eve ate has been called an Apple from the earliest days of English literature, being so called by our earliest English poet, Caedmon. The fruit meant by all, including Milton, is not our Apple, but any large edible fruit.

ASPHODEL.

1. Flowers were the Couch,
Pansies and Violets and Asphodel.
P. L. IX. 1060.

2. Nectared lavers strewed with Asphodel.
Comus, 838.

Milton would probably have seen the Asphodel in Italy, and perhaps in English gardens, but when he uses the name he is copying from the Greek description of the Asphodel as the chief flower of the Elysian fields.

BALM.

One small Thicket past
Of blowing Myrrh and Balme.
P. L. IX. 629.

This is the only passage in which the plant Balm is mentioned, but the word occurs also in the following passages:—

P. L. I. 773; II. 402; IV. 248; V. 293; XI. 546; S. Ag. 146, 651; *Comus* 674, and the word Balmy is in P. L. IV. 159; V. 23; VIII. 253; XI. 706; *Comus* 674; but in all these passages the reference is not to the plant, but only to what Milton calls its "flowering odours," P. L. V. 293.

BAY.

And some flowers, and some Bays.
For thy Hearse, to strew the ways.
Ep. Marchioness of Winchester, 57.

The Bay was the emblem of victory, and figured the victory over death.

CEDAR.

1. Cedar, and Pine, and Firr, and branching
Palm. P. L. IV. 139.

2. The Eagle and the Stork
On Cliffs and Cedar tops their Eyries build.
P. L. VII. 424.

3. Stateliest Covert, Cedar, Pine or Palme.
P. L. IX. 435.

4. By His prescript a Sanctuary is fram'd
Of Cedar, overlaid with gold.
P. L. XII. 250.

5. Under the Covert of some ancient Onk
Or Cedar. P. R. I. 306.

6. In Cedar, Marble, Ivory, or Gold.
P. R. IV. 68.

7. About the Cedarn alleys. *Comus*, 990.

8. Earth and the Gard'n of God, with Cedars
crown'd. P. L. V. 260.

9. Her bows as high as Cedars tall
Advanced their lofty head.
Psalms LXXX. 9.

Milton knew nothing of a full-grown Cedar except from the Bible.

CITRON.

Hew blows the Citron Grove.
P. L. V. 22.

Known to Milton only as an imported fruit.

CORN.

1. Corn, wine, and oyle. P. L. XII. 19.

2. Fertil of Corn the glebe. P. R. III. 259.

3. His shadowy fane hath thresh'd the Corn.
L'Allegro, 108.

4. With vast increase their Corn and wine
abounds. *Psalms* IV. 56.

5. Up stood the Cornie reed
Embattled in her field. P. L. VII. 321.

See also Wheat.

H. N. Ellacombe.

(To be continued.)

THE ROCK GARDEN.

AETHIONEMA SCHISTOSUM.

AETHIONEMA SCHISTOSUM of Boissier and Kotschy is hardy with me, and a plant which I have had for a couple of years or so is again flowering well in a moraine of whinstone chips and lime rubbish. It is an erect grower, about 9 or 10 inches high, with narrow glaucous leaves and dainty heads of white and rose. It comes in later than *A. pulchellum*, and the habits of the two are different. *S. Arnott.*

of foliage and quite 18 inches of bloom. I was informed that they had been grown in 5-inch pots. A fellow gardener has since informed me that he is in the habit of growing *Antirrhinums* in pots for early flowering, and is greatly pleased with the results. *C. E.*

SLUGS ON DAHLIAS.

A WRITER in the *Pharmaceutical Journal* recommends the use of naphthalene dusted in a ring about 2 inches from the stem as a deterrent of slugs. By watering with a solution of ammonium carbonate (0.75 per cent.), the slugs

ROSE LEMON PILLAR.

THE beautiful new Rose illustrated in fig. 10, raised by Messrs. G. Paul and Son from the varieties *Maréchal Niel* × *Fran Karl Druschki*, was one of two Roses that received the Gold Medal of the National Rose Society on the 29th ult. Lemon Pillar also received the Award of Merit of the Royal Horticultural Society on June 17, 1913. The blooms are large—our illustration shows them about half natural size—of beautiful form, and the petals are a delicate shade of yellow. The plant makes a vigorous-growing bush, suitable for training on pillars; the healthy foliage and stout stems denote a good garden variety.

ORCHID NOTES AND CLEANINGS.

BRASSOLA-LAELIO-CATTLEYA ASTARTE.

A VERY fine variety of this cross between *Brassavola Digbyana* and *Laelio-Cattleya Martinetti* is sent by Mr. H. Haddon, gr. to J. J. Neale, Esq., Penarth. It measures 8 inches across. The sepals and petals have a pale yellowish-green ground colour, the surface of which is tinged and veined with purple. The large and handsome labellum is lilac colour beautifully veined with reddish-purple, the central part having two distinct pale yellow blotches. It is interesting to trace *Laelia tenebrosa* and *Cattleya Mossiae*, the parents of *L.-C. Martinetti*, in the hybrid, and to note the fleshy substance imparted by *B. Digbyana* and the slight fringing of the lip.

JAVA.

WHICH IS THE BEST CLIMATE FOR VEGETATION?

MY eight years' experience in Java, in which country there are no extremes of temperature, has taught me that there is an enormous number of plants that will not grow in this equal climate! Besides the "cold" plants there are many from dry countries that refuse to flower here, even when they grow: they do not like this climate. In a climate with extremes (the cold, of course, must be only a few degrees of frost), a large number of, if not all, tropical plants, when fairly established, will stand some degrees of frost unharmed, while the heat of the warm season is only beneficial to them. So we have in an equal temperature no impulse in vegetation such as is to be observed in a climate of extremes.

For this reason "cold" plants that will flower here never attain the size they reach in their native country. There are only a few exceptions to this rule, and they go to show how true it is that experience is better than theory. All this is without consideration of the rain, which seems to be in an equal climate much heavier than anywhere else. Many plants would do well but for the rains, which destroy everything and keep the ground saturated with water for many months; the permanent downpour causes the roots to rot. So far as my observations go the amount of sunshine in a year is considerably less than in Holland, which may be a surprise to many that think of Java as a land with everlasting sun. Every day in the year, even when it does not rain, the sun gets hidden in the clouds, often as early as 9 a.m., and it is not visible again for the whole day! This explains much, for in Europe the sun often shines every day for weeks from a cloudless sky! We are obliged to go to Spain to see the sun for many days uninterrupted. In Java this does not occur for a single day the whole year round. It is "the land of everlasting sun," and the dulness has greatly surprised me. *M. Buysman, Lawang, East Java.*



FIG. 10.—ROSE LEMON PILLAR.

FLORISTS' FLOWERS.

ANTIRRHINUM YELLOW KING.

THIS magnificent *Antirrhinum*, which constituted the effective central group in Messrs. Dobbie and Co.'s stand of these flowers at Vincent Square on June 8, was sent to the R.H.S. trial of *Antirrhinums* last year by Messrs. Barr and Sons, and there received an Award of Merit, it being the most outstanding tall, deep yellow variety. On Messrs. Dobbie's stand there were some specimens nearly 5 feet tall—3½ feet

are brought to the surface and may be collected and destroyed. The same writer recommends for the destruction of ants the use of powdered white sugar dosed with arsenic. Having discovered the nest, the sugar may be placed in the neighbourhood. It is quickly conveyed by the ants to the nest and the ants disappear. One teaspoonful of the mixture is sufficient for the destruction of a nest. It is evident that the method must be used with caution, and dogs, cats, and other animals prevented from access to the sugar.

ROMULEA.

THE genus *Romulea* includes several species of garden interest, but, being natives of Western Europe, the Mediterranean region and South and West Africa, they usually require protection in this country, although in warm districts the plants will survive the winter out-of-doors. The specimen of *R. rosea* illustrated in fig. 12 is growing in the open, in a Gloucestershire garden. It is planted in a sunny situation, and is a beautiful object when in flower, the blooms resembling a rose-coloured *Ixia* with a yellow throat to the funnel-shaped tube. The flowering period is March-April. So closely does the plant resemble an *Ixia* that it has been named *Ixia rosea*; but its synonym, *Trichonema rosea*, is better known, and under that name the plant is figured in *Bot. Mag.*, tab. 1,225. There are several varieties in cultiva-

FRIAR PARK.

To garden-lovers of all sorts and conditions, however critical or fastidious, the lovely grounds of Friar Park, Henley-on-Thames, present features of interest and beauty during the whole of the year. Those especially who are interested in the botanical aspect of gardening will take a keen pleasure in the varied and comprehensive collections of plants, trees and shrubs which are here to be found in perfect condition, each in the position best adapted to its needs. Every visitor to Sir Frank Crisp's garden is familiar with the famous rock-garden, ingeniously made to imitate a miniature Alpine scene, with Matterhorn, waterfall, and chain of lakes. Quite recently the masses of alpine Pinks were at their best, tinting the rocks with their delicate hue: patches of *Gypsophila dubia*, both white and rose, were in full flower, and vied in beauty with

here it has been possible, by means of carefully adapted treatment and conditions, to persuade it that it is still growing on its native rock. In the little rivulet, bordered by marsh plants, many pretty *Primulas* are to be found; and the wider stretches of water are scattered over with delicate white, pale yellow, and rose-flowered *Water Lilies*.

The mediaeval gardens at Friar Park have been carefully constructed by Mr. Knowles from mediaeval illustrations, all the details faithfully copied, and all flowers of a later date than the 15th century rigorously excluded. The effect is marvellously good; one is transported back in imagination at least four hundred years, and modern ideas seem totally out of place in this placid back-water of civilisation. In one of these gardens is an Elizabethan herb plot, planted with all the approved medicinal herbs, which were formerly an indispensable feature of every garden. It is with a feeling of having bridged several centuries in a single step that one leaves the last of the mediaeval gardens and approaches the Rosary. Here at least one may feel that gardening has taken immense strides; the vigour and beauty of the Roses, now at their very best, provide eloquent testimony to the success attained by Rose-growers, especially during the last century. The beds of dwarf Roses are covered with bloom, while above them, tall, weeping *Wichuraiana* bushes are hung with pendulous sprays of perfumed blossoms. Ramblers and trailers are everywhere in evidence, clothing arches and pergolas and walls, and flinging their scented petals on every pathway. In the clear waters of the lake are reflected the foliage of *Gunneras* and *Rheums*, and the tall, slender forms of *Bamboos*. Colonies of *Irises* stand on the banks, carpeted with blue *Myosotis*; across the lake, in the distance, stand massed ranks of *Abies pungens glauca* and *Cedrus atlantica glauca*, their misty, bluish foliage relieved by the dark purple tints of *Prunus* and the golden sunshine of *Cupressus*. In the nearer distance *Olearia*, *Weigela*, *Cytisus*, *Lonicera*, and other flowering shrubs brighten the prospect, and bravely substitute their charms for those of the *Rhododendrons*, now in retirement until next spring.

A visit to Friar Park would be by no means complete unless it included an inspection of the collection of indoor plants, which is unsurpassed even in many botanic gardens. Economic plants, the names of which are familiar to many of us as bearing spices of various kinds, are here represented in full growth, and can often be induced to bear fruit. There is a very complete collection of succulent plants, all the cultivated species of *Aristolochia*, many with the curious flowers fully expanded; an interesting collection of gourds; and selections of most plants which have marked peculiarities of growth, flower, or fruit. There are large numbers of "Pitcher" and other insectivorous plants, and *Orchids* of strange and bizarre appearance are represented by a considerable number of species, some of which have already been illustrated in these pages (see *Gard. Chron.*, January 25, 1915, pp. 38, 39). In the main range of glass-houses there is a large collection of *Orchids* of various kinds. *Miltonia vexillaria* is here in first-rate form and condition; and a very choice selection of *Laelio-Cattleyas*, of which the best are L.-C. *Canhamiana*, L.-C. *Aphrodite*, and L.-C. *Fascinator*. In the cool houses, *Odontoglossums* and *Masdevallias* are finely in bloom; whilst in the tank-house, *Sobralia xantholeuca* and several other warm-house species are in full flower. The greenhouses are full of flowers; on one stage *Streptocarpus* plants are covered with bloom of superb size and quality, whilst *Begonias* and other decorative plants are at their best. Other houses containing *Crotons*, *Caladiums*, *Dracaenas* and fine foliage plants of every type, and the vineries and other fruit houses are in excellent condition. J. O'B.



FIG. 11.—ROMULEA MACOWANII: FLOWERS BRIGHT YELLOW WITH REDDISH TINGE AT THE TIPS.

tion, of which Baker, in his *Irideae*, describes five. *R. rosea* is the commonest species; it was introduced to this country from the Cape of Good Hope in 1818. The Mediterranean species form the hardier section of *Romulea*, and will grow and flower well in sheltered situations in well-drained soils out-of-doors. They make good rock-garden plants, and are suitable for the front of flower borders, flowering in the early spring. *R. Bulbocodium*, *R. ligustica*, *R. crocifolia*, *R. ramiflora*, *R. Columnae*, *R. purpurascens* and *R. elongata* are amongst the best known. *R. Macowanii*, fig. 11, is of more recent introduction; the plant grows wild in the Eastern Cape Provinces, and also on the Boschberg, at 4,500 feet elevation. The flower stems are very short, one-flowered, or forked from the base, with two to four short, erect branches. The flowers are about 1 inch in diameter, bright golden-yellow in the lower part, lighter upwards, and often tinged with red towards the tips.

the *Campanulas*, plumose *Saxifrages*, *Helianthemums*, *Cistus*, and the somewhat waning charms of the *Aubrietias*, which not long ago had reigned supreme in this little Alpine world. Along a rocky walk, sheltering in a shady nook, *Cypripedium spectabile* has unfolded its wealth of pink and white flowers, while not far away a great specimen of *Euphorbia Wilsonii* displays its mass of bloom. On an elevation above the path, the long bright yellow sprays of *Tropaeolum polyphyllum* mingle with the bluish glaucous foliage trailing over the rock. A little bay shelters a colony of *Pentstemon azureus*, which luxuriates in its position and charmingly fulfils the promise of its name. Among the many representatives of the *Ericaceae*, one of the most carefully tended and most thriving is *Azalea (Loisleuria) procumbens*. From a small beginning it has grown into a fine colony; like many of the species which have their home in the highlands of Scotland, it does not usually thrive in gardens, but

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XXXVI).

L'EXPOSITION À HOLLAND HOUSE.

MALGRÉ la guerre, la Société Royale d'Horticulture d'Angleterre exécute fidèlement son programme, et la semaine dernière il nous était donné de visiter la grande exposition d'été, organisée dans Holland House.

Les cinq tentes réservées aux produits horticoles étaient abondamment remplies et la foule, attirée par un temps idéal, était nombreuse le jour d'ouverture. Les orages des jours suivants eurent malheureusement pour résultat de nuire quelque peu à l'assistance.

D'une manière générale, l'impression que nous a laissée l'exposition était moins favorable qu'à Chelsea six semaines auparavant. Peut être que la disposition des envois en tentes plus petites est moins favorable que leur groupement dans l'immense abri de Chelsea où l'on embrassait d'un seul coup d'œil toutes les splendeurs réunies au prix de tant de sacrifices?

Certaines grosses firmes qui, d'habitude, font une petite exposition à elles, faisaient défaut cette année et leur abstention fut remarquée d'autant plus que leurs noms sont familiers à tous les visiteurs. L'exposition n'en constituait pas moins un régal pour les enthousiastes de Flore.

Les Orchidées étaient abondantes, une dizaine de stands au moins étaient remplis de Cattleyas, Miltonias, Odontoglossums, Oncidiums, Cypripediums, Odontodias, etc.

Comme de coutume l'Adiantum et l'Asparagus étaient employés pour garnir les intervalles. Nous avons pu nous rendre compte, de nouveau, de la valeur, au point de vue effet, des lots disposés en ordre espacé. Un Odontoglossum de dimensions rares, l'O. Georgius Rex, amené par M. Gurney Fowler, remporta la Médaille Lindley.

La vogue des Pois de senteur ne fait que s'étendre et de nombreux professionnels et amateurs en présentaient des lots importants. Il est manifeste que de grands efforts ont été réalisés en vue de la fixation des couleurs pures. Certaines variétés exposées marquaient un véritable progrès dans cette voie.

La Rose occupait encore, comme il convient en Angleterre où elle est considérée comme la fleur nationale, une place d'honneur. Beaucoup de spécialistes s'y occupent de l'obtention de nouveautés. La Paul's Scarlet Climber, déjà remarquée à Chelsea, attirait de nouveau tous les regards; les plantes présentées étaient réellement magnifiques. La Colcestria, autre nouveauté à fleur énorme à laquelle échet la coupe Clay, et l'Auguste Hartmann produisirent également sensation.

Les variétés de Roses grimpantes étaient moins abondantes qu'à Chelsea. Bien que les grands espaces leur semblent nécessaires dans une exposition, elles étaient encore du plus heureux effet ici. Avec plaisir on constate que des variétés populaires, telles que Crimson Rambler et Dorothy Perkins, continuent, malgré l'avalanche de nouveautés, à maintenir leur droit de cité. Et cependant avec quelle rapidité ces nouveautés se propagent! L'American pillar à peine connue, se trouve déjà représentée dans tous les stands et la fameuse Mme. Edouard Herriot qui fit son apparition à Chelsea en 1912 où elle remporta le prix spécial du *Daily Mail*, semble déjà indispensable dans toute collection.

D'autres Roses, genre Jessie, Mrs. Outbush, etc., assuraient aussi un heureux effet dans plusieurs stands où elles étaient employées pour former tapis, notamment aux Oeillets.

Les plantes de serre chaude étaient assez rares. Elles étaient surtout représentées par des Cala-

diuns et quelques lots de Fougères, le tout amené en spécimens d'excellente culture.

L'abondance des plantes vivaces et en général des plantes de jardin était frappante. Antérieurement déjà nous eumes l'occasion de signaler cet engouement des amateurs pour des plantes de culture facile, moins appréciées dans d'autres pays. Il suffisait d'examiner quelques stands pour constater la spécialisation pour des genres tels que l'Iris et le Delphinium. Le nombre de variétés semble illimité et pour le Delphinium notamment la fleur a atteint une haute perfection. Toutes les nuances du bleu sont représentées dans certains lots, depuis le D. Moerheimi d'un blanc trabisant à peine une teinte bleuâtre jusqu'au D. Edwin Beckett fortement violacé.

D'autres observations faites par les visiteurs étrangers portaient sur l'importance acquise en Angleterre par les Conifères nains du Japon et la demande croissante pour les Erables décoratifs. On en rencontre également de nombreuses espèces. Les moins initiés ont aussi remarqué un Géranium à feuilles de lierre, avec fleur d'un rose pâle: Radiancé.

De l'avis général, le plus grand succès était obtenu par les Begonias de MM. Blackmore et Langdon. Les grandes expositions des dernières années ont chaque fois mis en vue les progrès remarquables réalisés en fait de Begonias, mais jamais la perfection n'avait été telle que cette fois-ci. Les fleurs atteignaient couramment quinze centimètres de diamètre et en peu d'occasions l'octroi de la coupe du couronnement pour le meilleur apport aura reçu un accueil aussi sympathique de la part du gros public.

Restent les fruits et légumes. On s'est plaint, avec raison nous semble-t-il, que dernièrement les concours y réservés par la Société Royale d'Horticulture n'attiraient que peu de concurrents. Une certaine réaction semble s'être manifestée et les apports à Holland House étaient plus nombreux. Nous avons remarqué les envois réussis de la maison Barr qui était représentée dans les deux catégories et celui du Major W. Astor (jard. M. Camm), dont les Raisins Frankenthal formaient un des meilleurs lots que nous ayons déjà vus.

NOUVELLES DIVERSES.

SECOURS AUX MARAÎCHERS FRANÇAIS.

Le baron d'Auchald a entretenu l'Académie d'Agriculture de France dans sa séance du 16 juin de l'oeuvre entreprise par la délégation des "Friends" de Londres pour contribuer à la réparation des ruines accumulées dans les régions ravagées par l'invasion allemande en France. Cette délégation s'est occupée, tout d'abord, de loger, de vêtir et de nourrir le plus grand nombre possible de sinistrés, mais son attention s'est surtout portée sur les besoins des fermiers en tant que graines, outils, machines et animaux de toutes sortes. En particulier, la société des "Friends" s'est chargée de la totalité de la distribution des graines potagères dans tout le département de la Marne et une partie de celui de la Meuse. Plusieurs milliers de kilos de Pommes de terre de semence et 1,700 paquets de graines de 14 espèces différentes de légumes ont été ainsi répartis. En outre, des quantités importantes de graines de variétés de légumes tardifs ont été semées à Germaize pour pouvoir ensuite être transplantées dans les jardins laissés en friche.

EN ALLEMAGNE.—Le *Nieuwe Rotterdamse Courant* reçoit d'Allemagne des renseignements sur la situation agricole. On lui apprend notam-

ment que des gelées très tardives ont complètement ravagé des contrées entières plantées de Pommes de terre et de Fèves. La sécheresse persistante a causé des dégâts énormes. Dans les parties élevées du pays, situées à l'est, les Pommes et les Poires tombent des arbres en très grand nombre. Les Fraises dessèchent dans les jardins. Les légumes dépérissent. Seules les Cerises ont bien donné.

ASSOCIATION POUR LA DELIVRAISON DES FLEURS.

—Le *Tuinbouw* signale la constitution, sous le nom de "Florists' Exchange Delivery," d'une association de fleuristes américains qui se chargent de la fourniture dans leur localité des fleurs qui ont été commandées chez des collègues d'autres localités. Une personne à X commande chez son fleuriste un bouquet destiné à être remis à une personne habitant Y. Le fleuriste, au lieu d'expédier le bouquet, qui risque d'arriver en mauvais état, informe simplement son collègue de Y, qui exécute l'ordre. L'association établie à 153, Bates Street, Detroit (Michigan, U.S.A.), s'efforce d'établir des groupements analogues dans les pays d'Europe de façon à aboutir à une organisation internationale.

À VIENNE.—Nous avons signalé les efforts faits à Vienne en vue de convertir des parties des parcs publics en jardins maraîchers. La municipalité et certains propriétaires ont donné gratuitement leurs terrains et environ 120 hectares ont été plantés de Pommes de terre, vingt de légumes. Cinq cents prisonniers russes et des femmes sont employés aux travaux de culture. Douze autres hectares sont cultivés par les enfants des écoles.

UTILISATION DES POMMES DE TERRE.

—Il existe encore en Angleterre des stocks considérables de Pommes de terre de la récolte de 1914. Malgré cela la consommation des tubercules de la récolte nouvelle est générale. Le département de l'Agriculture attire l'attention sur cette anomalie et engage le public à assurer l'utilisation des quantités encore disponibles de 1914. On confirme que toutes les Pommes de terre nouvelles récoltées en Belgique sont mises en vente sur les marchés allemands.

KORT OVERZICHT VOOR DE VLAMINGEN.

VERLEDEN week had de Zomertentoonstelling plaats der Koninklijke Tuinbouwmaatschappij van Londen, die niettegenstaande den oorlog, haar gewoon programma ten uitvoer brengt. Orchideeën waren wel vertegenwoordigd en, als gewoonte, bekleedden de rozen een eereplaats. Ook reukerwten waren opnieuw in groot aantal aangebracht.

Opgemerkt werd de wijze waarop gewone tuinplanten ter tentoonstelling komen. Zoo trof men vele verscheidenheden van Iris en Delphinium aan.

Den grootsten bijval genoot de zending dubbele Begonia's van Blackmore en Langdon. Deze hadden meestal tot 15 centimeters doormeter en behaalden, met aller goedkeuring, den beker voor het beste lot.

Fruit en groenten waren nu in grooter hoeveelheid dan in de gewone tentoonstellingen waar men klachten niette over hun gebrek.

Droogte en vorst hebben groote schade aangebracht in de fruit- en groentenplantingen van Duitschland. In Amerika is eene vereniging gesticht van bloemverkoopers met het doel de bestellingen voor een andere stad gedaan aldaar door een ambtgenoot te doen uitvoeren.

NOTES ON IRISES.

BEARDED IRIS SPECIES.

In your issue of June 19 Mr. W. R. Dykes returns to the very interesting problem, tentatively discussed in a previous article (Vol. LVI., p. 49), of the origin of *Iris germanica*, giving reasons to believe that it is of hybrid origin, and suggesting that *I. aphylla* is at least one of its parents. If it is a hybrid, *aphylla* is certainly a very possible parent, and it may be some additional evidence that *I. germanica* sets seed (sparingly) with pollen of *aphylla*. Seven flowers crossed by *aphylla* all set large pods, but only four had seed in them. Of the six seed resulting, three germinated and have flowered. One is very near *germanica* in size and form of flower, but intermediate in height, and a very shy flowerer. The colour of the flowers is of *germanica* type, but suffused slightly with a curious brown tone. The beard is of *germanica* type, dull purple-blue just in front and the rest yellow. The second is near *aphylla* in form and colour and in beard (which is even bluer and more conspicuous than in *aphylla*), and intermediate in other characters, and very free flowering. I still have these two seedlings. The third was very near *Kochii* in habit, form of flower and in colour (compared when in flower together). The falls were oval or spoon-shape, and the style crests of the same distinctive form as in *Kochii*. The chief distinguishing feature between the two plants was in the beard, which in this seedling was of stiff fibre and pale blue, while in *Kochii* it is lax and yellow. There was a slight yellow tinge in the base of the standards and falls as in *Kochii*. This type has also appeared in the seedlings from another pod of *germanica*, but there is some uncertainty whether the pollen parent in that case was *aphylla*, though recorded as probably so.

From other reasons *Kochii* is probably a hybrid, and it may therefore, in view of the above results, give a clue to the origin of *germanica*—that is (if *aphylla* is one parent), to the other parent.

I. germanica is not especially sterile compared with many hybrid Flag Irises, though it does not seed freely, and its pollen is apparently entirely infertile. Twenty-one flowers crossed by *I. macrantha* all set pods, about half contained seed, six being the most in any one pod, and forty-one seed altogether. So far eleven seed have germinated and six have flowered. Of these four are practically identical and very fairly intermediate; but one of them was bearded (less than on the falls) also in the channels of the claws of the standards. A fifth was also intermediate in all other characters but colour, which was paler and more "self" than either parent. The other seedling had thin stems and smaller flowers, with narrower petals than *germanica*, approaching the form of *Kochii*, and with the same or similar style-crests, but of *germanica* colour and beard of *germanica* type though weaker. *I. germanica* *Oriflamme* is probably of this parentage.

The only other cross of *germanica* by a bearded Iris which I have made was by *pallida dalmatica*. Four flowers crossed set three pods, much smaller than those by *aphylla* or *macrantha*, and containing only four seed altogether, which failed to germinate. *Germanica alba* also sets seed with *macrantha* pollen. I have raised one plant and have a pod set this year.

So far, therefore, as fertility is any test of affinity, *macrantha* is as near to *germanica* as *aphylla*, and if it is a species—and it has every appearance of a species except the size of its flowers—are there any insuperable reasons against it being the other parent of *germanica*? The cross *aphylla* × *macrantha* would be easy to make, as *aphylla* is a very free seeder.

As to this other parent Mr. Dykes's discussion of the characters whose presence in *germanica* we have to explain seems decisive

against *pallida*, but less so perhaps against *Madonna* or *albicans*. Beside the characters mentioned there are points in the form of the flowers, especially the falls, which, as a florist, I should not think possible to have come from *pallida* (the true, tall, violet-blue flowered *pallida*). They are also absent from *aphylla*. There is, however, "Red *Pallida*," but that raises an even wider problem which I will defer for the present. The chief point is in the disposition of the falls. In *pallida* the falls have a functional bend just beyond the beard, and they hang "positively." In *variegata* (and many seedlings of *variegata*, *neglecta*, *Amoena*, and "Red *Pallida*") this positive bend is apparently absent, and the falls "spread" more or less horizontally. *Germanica* is intermediate—it is a semi-spreader. Whatever may be the botanical value of this character, there is, I think, no doubt that it is a definite and persistent one (though possibly compound), and though masked sometimes by the broadening of the hafts, which tends to make the falls spread convexly, or by weak substance and narrow hafts which cause the falls to hang of their own weight, it is transmitted regularly as a unit, the true intermediate forms being due to their being heterozygous (or to the character being compound). *Pallida* is cer-

either present or absent, and only very rarely showing faintly in heterozygous individuals. As it is very unlikely, from the results of other crosses, that these characters could come from *macrantha*, the inference is suggested that *albicans* is not a simple albino of *Madonna*, but a hybrid. If so, and if these characters are not found in any other form of *Madonna*, they should prove a clue to the other parent of *albicans*. I do not think there can be any uncertainty about this cross, but as the results are so unexpected I have repeated it. As at least one undoubted sport or mutant has appeared among my seedlings the sporting of new characters is not entirely out of the question; but if inadmissible in the case of *germanica*, and if *pallida*, *Madonna* and *macrantha* have to be rejected, there remains the possibility of an unknown species. I have had reasons to suspect the existence of an unknown species for some years, but on quite other grounds than the origin of *germanica*, and I doubt whether, even if it exists, it would fit the requirements of *germanica*, though it appears to be connected with *albicans*. And as it raises other and much wider problems—of "Red *Pallida*," *plicata* and *flavescens*, etc.—it will be best to consider it separately. A. J. Bliss, Morwellham, Tavistock.



FIG. 12.—ROMULEA ROSEA FLOWERING OUT-OF-DOORS IN A GLOUCESTERSHIRE GARDEN.

(See page 35.)

tainly homozygous for this character, and so, I think, is *aphylla*. *Germanica* is apparently heterozygous, any effect of the broad hafts being set off by the weight of the blade. Therefore if *aphylla* is one parent, the other parent should have "spreading" falls. I do not know the purple type *Madonna*, but *albicans* appears to me to be even more obviously heterozygous for this character than *germanica*. I have tried many crosses with *albicans*, but hitherto, as in Mr. Dykes's experience, it has proved nearly sterile (the pollen wholly so). This year, in stronger soil and the warmer climate of Devon, it has set pods freely, though it remains to be seen if they contain any seed. Altogether I have flowered only three seedlings of *albicans*, but though they may throw no light on the origin of *germanica*, they raise the question of the possibility of the appearance of a new character not in either parent. Two of these seedlings are from a cross of *albicans* × *macrantha*, and the flowers are nearly a self pale rose-mauve. One, however, has the base of the leaves coloured strongly purple and the beard is tipped brown. These are probably Mendelian characters, and I have a long series of seedlings showing that they are transmitted as simple unit characters,

TREES AND SHRUBS.

POISONING TIMBER IN NEW SOUTH WALES.

MR. A. H. FARRAND, Diddillibah, writing in the *Queensland Agricultural Journal* for May, gives the following interesting information on the methods adopted in New South Wales to clear land of timber:—"When ring-barking was in its comparative infancy in New South Wales, thirty to forty years ago, mostly only Box timber was ringed, where it had become too dense to allow pasture to grow. Areas were large and rentals very cheap, so that reclaiming inferior country was unnecessary. The style of ring-barking was sapping, but after a time other methods were tried, such as chip-ringing, frill-ringing, removing strip of bark around tree, etc., but chip-ringing remained in general use. It was thought that sapping, causing the tree to die quickly, conduced to a plentiful and vigorous growth of suckers, and there were no doubt good grounds for such opinion. By destroying the timber quickly one is able to bring the land into use so much more quickly that it very much

more than compensates for the extra suckers that it may bring. Ringing being done in the summer, when sap is well up, its effect, when the tree has been sapped, is shown in a few days by the leaves turning colour; and slumming of work can easily be detected, but contractors for this style might not now be easily obtained.

"For some years past in New South Wales there has been a great rush for land, and any small area now made available, within reach of a railway, that can be improved into farming land, commands numerous applicants. Such blocks in almost every case are heavily timbered, and the best and cheapest method of destroying the trees has become an important matter.

"Various liquids for poisoning trees have been put on the market, and poisoning with arsenic has been extensively practised of late years. Arsenical poisoning, like sapping, produces a very quick effect, and when it was first tried in New South Wales the Press was deluged with letters extolling its merits. The experimenter was so elated with its apparent success that he made his deductions without waiting sufficiently long to be fully seized of all the points. Arsenic is applied in a liquid form by pouring it into ring cut around tree from a vessel such as a teapot, and frill-ringing, holding such liquid best, is generally adopted. The poison is at once carried up by rising sap, and the top of the tree dies as in sapping, but as such poison does not go below the ringed cut, the bottom of the tree is not affected, and a good healthy crop of suckers soon arrives.

"Arsenical poisoning of trees is about on a parallel with sapping. If four cuts are put in tree opposite one another and arsenic applied the tree will die; and if just one cut is put, the limbs on the tree on that side die, whilst the rest of the tree flourishes, thus showing how arsenic is carried up. The other liquids put on the market had much the same effect as arsenic, and as none of them had any effect below the cut into which they were poured the bottom part of tree still went on producing suckers. After a very considerable experience in dealing with timber in New South Wales in various parts, and many years with the Government, where one of my duties was to inspect ring-barked areas, so that I saw the work being done and years afterwards saw the effect, I would summarise as follows:—Have work done, whether arsenic is used or not, late in the summer, so that the suckers will begin to sprout in the winter time, when the tree is in its most unhealthy period, as you will then have fewer suckers, and those that do grow will not be such strong growers. Also, if the country is stocked with sheep, they will, in the winter time, keep nibbling at green shoots and so impede their growth, and in some instances altogether kill them.

"Poisoning with arsenic repays the trouble, but do not make your solution too weak, as the arsenic itself is cheap. The 'rise and fall of sap,' so generally spoken of, is apt to deceive you; but remember, when the arsenic is applied, the sap is rising, and the poison therefore is carried upwards, so be prepared to see the tree below the cut still growing. This applies to every poison I have seen used.

"Fire-sapping is being extensively used in the farming districts of New South Wales. A little earth is removed at the foot of the tree and it is lightly ringed at the bottom, and any small timber stacked around it and burned. This causes the tree to die quickly, and it will burn up when grubbed."

THE LIME AVENUE, SHREWSBURY.

It is, perhaps, not generally known that Shrewsbury boasts of what is probably the finest avenue of Limes in Europe. The trees, which number 366, were planted in what is now the Quarry Park in 1719, so that they are nearly 200 years old. Many have attained the great height of 160 feet, and measure as much as 14

feet in girth at a distance of 9 feet from the ground.

I am sorry to state that the trees show signs of neglect, which has undoubtedly extended over a great number of years. Last winter I removed many cart loads of decayed branches, and we had to requisition a fire-escape to do this work. Numerous holes have been thoroughly cleared out—in some were four bucketfuls of stagnant water—and filled with sand and cement, floating the surface with cement only. Some of the cavities held as many as three barrow-loads of the stopping. In every case the cause has been through removing large branches and not treating or dressing the wound with gas-tar, three coats of which is a preventive against decay and fungus.

During the past winter five of these large trees have been removed owing to their unsafe condition, chiefly through decay. *Arthur James Ward, Superintendent of Parks, Shrewsbury.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

STONE FRUITS.—Plum trees have made a considerable amount of growth, notwithstanding the spring drought; this is probably because the roots penetrate to a greater depth than those of most other kinds of fruit trees. Great care is therefore necessary in the shortening of the young side growths, or the result will be a number of useless lateral growths. It may be as well, therefore, to delay the summer pruning of Plums for a while. Remove all foreright shoots on Peaches, Nectarines and Apricots, and see that the fruits are exposed to the sunshine. Do not employ the knife on Apricots unless the shoots are too tough to be pinched off by the thumb and finger. Young trees, as a rule, develop more foreright growths than older trees that have been in bearing for a number of years.

SMALL FRUITS.—Gooseberries and Currants are making considerable growth, and may be pruned lightly for the time being, the work to be done again in about a month's time, when all side growths may be shortened further to encourage the proper development of the basal buds. Raspberries are promising good crops of fruit, and, notwithstanding the spring drought, both old and young canes are vigorous and healthy. In hot, dry weather red spider may make its appearance and become very troublesome. The canes should not only be well syringed with clear water, as circumstances demand, but the roots also may be supplied with moisture as soon as the berries are gathered. If the surface of the soil is hard or the mulching material trodden down, lightly fork the ground, so that the moisture may be more easily absorbed by the soil.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

GARDENIA.—During autumn and winter there is great difficulty in getting the buds of *Gardenia* to open. Arrange that the plants shall be in different stages in the autumn and see that they are strong and vigorous with the wood well ripened. Plants that have been weakened by long flowering or are pot-bound will continue to grow, but are useless for autumn flowering, as in most cases the buds drop before they open. Remove all the flower-buds on a portion of the stock, and reduce the long shoots a little. Grow the plants in a genial atmosphere and keep them free from mealy-bug and scale insects. Shade no more than is necessary to prevent scorching. By this means the plants will be in a good con-

dition for blooming, as even in the most favourable conditions any lack of sunshine has the effect of hindering the development of the flowers. Repot young plants raised from cuttings. Later pinch the shoots to cause the plants to grow bushy. Feed regularly plants in flower and syringe them with weak soot-water as a deterrent to insects.

BEGONIAS REX.—When propagated from leaves and treated in a similar manner to *Gloxinias*, these *Begonias* make very handsome plants. They do not require much warmth, but the shoots are liable to damp off if the conditions are too cold and moist; an intermediate temperature and a situation well exposed to the light are suitable.

HYDRANGEA.—Insert cuttings of *Hydrangeas*, as suitable shoots are available for the purpose until the end of August. Insert the cuttings singly in small pots and plunge them in a warm pit or propagating case in which they will root readily. Remove them from the propagating house when rooted, and harden them gradually in a cool pit, withholding water as the season advances. Select strong, young plants of different sizes and shorten the shoots, to replace worn-out specimens. Shift the plants into larger pots according to their size, using fairly strong loam, a little leaf-mould and old mortar rubble, with an 8-inch potful of bone-meal to every barrow-load of compost. Stand the plants out-of-doors in full exposure to sunshine; then the wood will become well ripened before the autumn. Feed larger specimens in tubs or borders on which the flowers are forming.

CAMPANULA PYRAMIDALIS.—Plants which are throwing up their flower-spikes should be fed liberally and the stems secured to stakes. The *Chimney Campanula*, also *Campanula persicifolia* and its white variety, are easily cultivated, and a more extensive use should be made of them as pot plants. Pay careful attention to young plants grown specially for flowering next season and replot them in the autumn.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

COELOGYNE PANDURATA.—The plants are growing freely and should be kept well supplied with water until the new pseudo-bulbs are matured thoroughly. The pseudo-bulbs are set rather widely apart on a strong rhizome, and, in consequence, a long receptacle such as a Teak-wood basket should be chosen. Use ample drainage material and a compost consisting of a mixture of A1 or Osmunda-fibre and Sphagnum-moss. The best time for affording the plants fresh rooting material is directly the roots are seen at the base of the new growth. Make the compost fairly firm about the roots. This *Coelogyne* makes a big specimen in a few years, occupying considerable space; therefore it is advisable to remove all superfluous pseudo-bulbs when replotting. The leading growth, together with one or more pseudo-bulbs, may be removed; the old pseudo-bulbs may be allowed to remain until fresh growth appears. If the severed portions are detached with roots and potted carefully, they will usually grow strong. Grow the plants in the warmest house, protect them from strong sunlight, and spray overhead whenever the weather is favourable.

LAELIA ANCEPS.—This Orchid, with its many varieties and hybrids, is growing and rooting freely, and some of the more forward specimens will soon commence to push up their flower-spikes. From now onwards let the roots have copious supplies of water and keep the atmosphere moist. The blinds may be removed earlier in the afternoon and not lowered so early in the morning. When the shading is removed, damp the stages and floors and spray the plants lightly overhead with tepid water. Close all the ventilators until late in the evening, when the bottom ones should be opened again, and if the weather is genial the top ones also an inch or so. In the morning damp the house and close the ventilators, but when the temperature rises admit air freely. This *Laelia* needs plenty of sunlight and air.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

STRAWBERRIES.—Young plants which were rooted in small pots at about the beginning of the present month may be shifted into the pots in which they will fruit. Meantime the young plants should be severed from the parents and removed to a position near the potting shed and watered carefully. Prepare a sufficient quantity of soil to pot the whole batch, and have this placed under cover in case of wet weather. If the soil is of a heavy nature, add a small quantity of lime rubble and soot and turn the mixture several times in order to mix the ingredients. Lighter soils are improved by the addition of small quantities of decayed manure and sprinklings of bone-meal. Wash both the pots and the crocks; pot rather firmly, taking care not to place the plants too deep, as it is important that the crowns shall stand well above the soil. After potting, stand the plants in the shade for a few days and spray them at least twice daily in fine weather. As soon as they have recovered from the shift, arrange them on a bed of ashes well exposed to the sunshine. Remove all runners as they appear and syringe the foliage each afternoon in fine weather until the roots are well established. The work of layering runners in later districts should not be delayed, otherwise the season may prove too short for the full development of the crowns.

ORCHARD HOUSE.—The fruits, and in particular Apples and Pears, require supporting. For this purpose strong pieces of raffia may be employed, while specimen fruits are best prevented from falling by the use of bags or a small-mesh net. The small bags of French manufacture obtainable for the purpose are extremely suitable and, unlike the ordinary net bags, not unsightly. These can be had in various sizes from the sundriesmen and cost about 5s. per 100. Continue to feed trees swelling their fruits, and see that the roots are well supplied with water. Admit air freely, both by the top and bottom ventilators, taking suitable precautions to exclude birds from entering. Remove Apples in pots out-of-doors as the fruits approach the ripening stage, protecting these in the skeleton frames covered with herring nets, as before advised. Continue to syringe the trees twice daily, using rain-water for preference. As the other crops approach the ripening stage feeding and syringing the plants overhead should be discontinued: damping the paths and borders will promote the necessary atmospheric moisture. As the fruits of pot trees are gathered the plants should be plunged out-of-doors and syringed freely twice daily. Feed the roots occasionally with liquid manure.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

WISTARIA.—Wistarias growing over verandahs, porches and arches or against walls require attention. Long growths are produced freely on healthy plants, and any of these not required should be shortened to within 6 inches of the stem. It may also be necessary to regulate the principal shoots, for if left to grow at will they wind around the nearest support, and though this natural way may not appear objectionable now, in a few years it may be a serious disadvantage. All the young shoots on standards should be pinched to within a few eyes of the base, to induce the back buds to mature for next year's flowering. *Wistaria sinensis* is the most generally grown species, but for standards or pillars *W. multi-juga* and its white variety are particularly suitable, the racemes, 2 feet to 3 feet long, showing to the best effect when grown in this form. As a dwarf tree *W. brachybotrys* is desirable; the flowers are produced in shorter clusters than the other types. Wistarias are easily increased by layering the long basal shoots.

ORNAMENTAL VINES.—Most of the species of Vitis are self-supporting, and in the wild garden may be allowed to ramble at will. On pergolas, pillars and walls the shoots of the stronger

growers require a certain amount of training and supporting against wind. This especially applies to species with large leaves, such as *V. Coignetiae*, *V. Thunbergii*, *V. armata* and its variety *Veitchii* and *V. megalophylla*. When planted against a balustrading wall it is necessary to cut back or remove sufficient growth so that portions of the wall may be visible, as it is not advisable to completely cover handsome stonework. The more dainty foliaged varieties such as *V. Henryanum*, *V. Thompsonii*, *V. flexuosa Wilsonii*, *V. heterophylla* and *V. leucoides* should, unless space forbids, be allowed considerable freedom, as the young shoots are very beautiful. The plants must be watered when necessary and stimulated occasionally by weak liquid manure or a concentrated fertiliser.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

TOMATO PLANTS IN POTS require constant attention in watering and feeding the roots; also thinning the shoots. Plants with fruits swelling should be watered liberally with liquid manure several times weekly; or, if this is not available, they should receive frequent light applications of a concentrated fertiliser previous to watering with clear water. As soon as the fruits begin to ripen admit air by day and night and maintain an even temperature. Plants intended for successional fruiting should be placed in their fruiting pots and the house ventilated in order that growth may be steady. Pot on successional plants as they become ready for a shift, for growth must never be stunted. A sowing may still be made with a view to producing plants to furnish late supplies.

TURNIPS.—Make a liberal sowing of Turnip with a view to producing a supply of roots for use in the autumn, and another about ten days later for a supply during the winter. Choose rich ground and make the soil moderately firm by treading or rolling. Sow in shallow drills made 15 inches apart and thin the seedlings to 9 inches apart in the rows. The Turnip fly is sure to prove troublesome in hot weather and must be kept in check by dusting the foliage with soot in the early morning, when the leaves are damp. Wood ashes may also act as deterrent to the fly and will have a stimulating effect on the crop. White Model, Red Globe and Snowball are good varieties for sowing in July, and Green Top Stone for sowing in August.

CARROTS.—There is still time to sow stump-rooted Carrots, and if the weather is at all favourable they will prove a valuable crop. Young Carrots should be thinned as soon as they are large enough for the operation, as during the autumn the plants soon become drawn if they are crowded.

CELERY.—Continue to plant Celery as quickly as circumstances permit; the latest planting should be made by the middle of July. Earth up the early plants as growth advances, and take great care to keep the hearts of the plants free from soil. Draw the leaves carefully together and tie them with some soft material, which should be removed after the soil is placed in position. Before earthing up the plants examine the bed carefully, and if the soil is dry soak it with clear, soft water a day or two previous to earthing up.

FRENCH BEANS.—Make a liberal sowing of French Beans in rich soil, choosing a sheltered situation in order to have pods late in the season.

WINTER GREENS.—Push on with the work of planting winter Brassicas. Make the soil moderately firm and plant the earliest crops in the strongest land. Those planted on rather poor soil will withstand the winter better than others grown quickly in very rich soil. Select an open situation and allow plenty of space between the plants. Water the roots freely as soon as the planting is finished, and when new roots develop let the surface soil be lightly broken with the hoe.

SHALLOTS.—Spring-planted bulbs are ready for lifting; place them where they will become well dried prior to placing them in the store-room.

THE "FRENCH" GARDEN.

By P. AQUATLAS.

MANURE BEDS.—The planting of these beds was delayed by drought, and now that rains have fallen the work of digging them lightly with the fork and converting two smaller beds into one large one should be done at once. They will then be ready for the final planting of Celery Winter Green, Chemin, and also Celeriac. After having trimmed the roots and the leaves, set the plants at 1 foot apart each way, intercropping the rows with either saladings, Radishes, or Spinach. Late Cauliflowers may be set instead of the Celery, allowing 18 inches between each plant; this crop, however, is not so remunerative as Celery. One or two large beds may be reserved for sowing Carrots Chantenay or Nantes at the end of the present month, as there is a good demand for young Carrots late in October and early in November.

CAULIFLOWERS.—The intermittent and late frosts checked the growth of Cauliflowers considerably, whilst the prolonged drought was the final cause of heavy losses in many gardens. The spring-sown plants were also disappointing, as "black leg" was very prevalent amongst them, although those grown in sterilised soil were absolutely free from this disease. Plants raised in autumn and grown in frames and under cloches were more satisfactory, and splendid heads are still available. Their prices have been remunerative and should compensate for the loss of the outside crop. As market produce, Cauliflowers should be treated as a catch crop, whether grown under glass or in the open, for to grow them as a maincrop is to court disappointment. They require much room, richly manured ground, the seeds of reliable strains are both scarce and dear, and the market freight is the highest (owing to weight) of any class of vegetables. If the heads sell for less than 2s. 6d. per dozen they are a loss to the grower.

THE APIARY.

By CHLOEBE.

WAX.—The cappings removed from shallow frames or badly-filled sections, as well as other pieces of comb, should be stored, as they make the best wax, realise the best price and win prizes on the show bench. Should the cappings be melted on the fire, remember to use rain-water; the wax must not come to the boil nor come in contact with the fire or it will lose its aroma, colour and fine texture. A better and safer method is to melt it in the sun by means of the solar extractor on a very hot day. A cheap extractor may be made by placing a thin sheet of metal in a shallow cardboard box and using a sheet of glass as a lid, tilting the whole towards the sun during the hottest part of the day and catching the melted wax in a shallow tin at the lower end of the box. After the wax is melted place the mould in hot rain-water; failing this, use distilled water, for ordinary water contains too much mineral matter in solution. When pouring the molten wax into the mould, strain it to remove foreign matter. If the operation be performed in a cold room there is a danger of the wax cracking when cooling rapidly. The best specimens of wax are coloured primrose, lemon or clear yellow. To polish it, use an old piece of silk. After the wax is cool and polished, store in an airtight box, preferably of tin, so that the delicate aroma may not evaporate.

SELLING HONEY.—Honey is fetching good prices, but care should be taken not to glut the market, as there is a tendency among beekeepers to rush their harvest for an early sale. When Christmas arrives the demand for good honey will exceed the supply, so there is no need to exercise undue haste. The sections must be quite free of propolis and stains, both of which are best removed by scraping with the edge of a piece of glass or a sharp pen-knife. If it be sold to shopkeepers it must be glazed on both sides and slightly laced with a paper edging; but when sold retail inexpensive cardboard cartons may be used, as glass has advanced in price very considerably. When honey is exposed for sale unglazed it attracts flies and wasps.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would oblige by delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 20—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Chinese Plants," by Mr. George Forrest.)

WEDNESDAY, JULY 21—
Cardiff Flower Show (2 days).

THURSDAY, JULY 22—
Nat. Carnation Soc. Show at R.H.S. Hall, Westminster. Manchester and N. of England Orchid Soc. meet.

FRIDAY, JULY 23—
Midland Carnation and Picotee Soc. Show, at Birmingham Botanical Gardens (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 63.1.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, July 8 (10 a.m.): Bar. 29.3. Temp. 64°. Weather—Bright sunshine.

Late Summer-Flowering Shrubs.

The view commonly held that there are but few mid-summer flowering shrubs suitable for the outdoor garden is combated by Sir Herbert Maxwell, who demonstrates in the following article the fact that there is a fairly wide choice of such plants.

"The complaint of a paucity of mid-summer-flowering shrubs has but slender foundation in fact, the truth being that gardeners and amateurs set much store by spring-flowering shrubs to provide a display before the herbaceous plants wake up, and are apt to neglect those shrubs which blossom when the borders are in full blow.

"The Rhododendron season, which began in November with *R. Nobleanum*, finishes in mid-July with the American *R. maximum* and *R. (Azalea) viscosum*. *Buddleia globosa* is past and *B. Colvillei* is nearly over (July 12), but *B. variabilis* in all its varieties is still something to look forward to. *Escallonia Phillipiana*, the hardiest of the genus, and her daughter, *E. langleyensis*—matre pulchra filia pulchrior—are very beautiful just now: *Deutzia Sieboldii* opened its first flower this morning; *Veronica salicifolia*, *parviflora*, *Traversii*, *Lindseyi* and other species are flowers of July; so are some of Lemoine's lovely hybrid *Philadelphus*. *Genista virgata* is a cloud of gold 10 feet high and twice

as much through; *Spiraea canescens* is a match for it in size and profusion of bloom, while *Spiraeas* of the *sorbifolia* type come in a month later. *Hypericum Hookerianum* and *H. patulum*, with its fine variety *Henryi*, have still to come, and the delightful *Magnolia parviflora* lags far behind the rest of its race. *Tamarix Pallasii* takes up the running when *T. gallica* fades. I have never seen *Styrax japonica* ring out its myriad silver bells before July. *Olearia Haastii* is the latest to bloom, and is not the least desirable of the genus. The Virginian Fringe Tree, *Chionanthus virginica*, is draped with its quaint tassels just now, and the dwarf Buckeye (*Aesculus parviflora*) will soon follow suit.

"All these may be reckoned hardy in most parts of the United Kingdom. In the favoured districts of the South and West the list may be greatly prolonged. *Desfontainea spinosa*, one of the most brilliant of Chilean plants, never begins to flower here till July is spent; but once it starts, the display is gorgeous. I measured a plant of this species about five years ago at Stonefield, in Argyllshire. One side had been cruelly sliced to clear a gravelled path, yet it was 112 feet in circumference and 12 feet high. *Eucryphia pinnatifolia* is liberal of its snowy blossoms, like those of *Hypericum* in shape, in August, and the scarce *E. cordifolia* flowers at the same season. *Carpenteria californica* will be over before the end of the month; but the hardy *Fuchsias*, *F. Riccartonii* and *globosa*, keep up the display for several weeks later. *Abelia floribunda* requires a wall, and the same is the case with the perpetual-flowering *Abutilon vexillarium* (megapotanicum), which carries its scarlet and yellow tassels through nearly all the year. *Myrtus Luna* is a charming autumn flowerer, and is quite hardy in places where *M. communis* requires the shelter of a wall. *Indigofera Gerardiana*, just now coming into flower, never fails to attract admiration to its delicate foliage and profusion of rose-coloured flowers. I will close this imperfect list by grateful mention of *Leptospermum scoparium*. The white type, waving sprays to the height of 8 or 10 feet in the summer breeze, is indeed a fascinating object, and we look forward to the day when the crimson variety, *Nichollsii*, will be its equal in stature and grace.

"In the North we have to write off some fine late-flowerers, such as *Hibiscus syriacus* and *Caryopteris Mastacanthus*, because in ordinary seasons they do not get enough sun to bring them into flower before the short days; but I think I have made out a case in favour of late-flowering shrubs. Those who complain that they have but few have it in their power to remedy the defect.

"In looking over the names above, I find no mention of the multitude of *Cistus* and *Hydrangea*, or of *Coriaria terminalis*. One of Mr. Wilson's Chinese *Spiraeas*, whereof the name, if it has one, has not reached me, has just come into flower—a really fine thing."

LANCASTER CHRYSANTHEMUM SHOW ABANDONED.—The secretary of the Lancaster Chrysanthemum Society informs us that his committee has abandoned the annual exhibition for 1915.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The annual exhibition of the National Carnation and Picotee Society will be held in the Royal Horticultural Society's Hall, Vincent Square, Westminster, on Thursday, the 22nd instant.

ROYAL AGRICULTURAL SHOW (p. 31).—We are informed that Messrs. WALSHAW AND SON, Scarborough, were awarded a Gold Medal for the *Spiraeas* they exhibited at the Horticultural Section of the Royal Agricultural Show held at Nottingham.

R.H.S. PAMPHLETS.—Since the outbreak of war the Royal Horticultural Society has frequently called attention to the necessity for economising our fruit and vegetable food supply and for increasing it; and, further, it has endeavoured to make known in sundry ways how this can be done. The trend of recent events has, moreover, emphasised the necessity for inexpensively maintaining our gardens during the war. To assist both these objects it has now published a series of useful pamphlets which are eminently practical and suitable to the requirements of to-day. Their titles are as under, and they may be obtained from the R.H.S. office, Vincent Square, Westminster. Single copy, 2d.; 25, 2s.; 50, 3s.; 100, 4s.:—(1) "Small Fruits for Cottage and Allotment Gardens," (2) "The Training of Fruit Trees," (3) "Vegetables and How to Grow Them in Small Gardens and Allotments," (4) "Bottling Fruits and Vegetables," (5) "Vegetable Cookery and Salad Making."

LECTURE ON CHINESE PLANTS.—At the Royal Horticultural Society's fortnightly meeting on Tuesday next, the 20th inst., Mr. GEORGE FORREST will deliver a lecture on Chinese plants, illustrated by lantern slides of a number of the finer Alpine plants which he saw in Yunnan and photographed where he found them, growing in their native homes.

WAR ITEMS.—We regret to state that Captain PETER I. WHITTON, only son of Mr. JAMES WHITTON, superintendent of the Glasgow Parks, was killed in action at the Dardanelles on June 28. He was 38 years of age, and was in business as a civil engineer when his regiment of Territorials was called up at the outbreak of hostilities. Captain WHITTON for many years was deeply interested in the Volunteer and Boys' Brigade movements. He was for some time a private in the 3rd Lanark Rifles, before receiving a commission, and was promoted to be Captain in the 7th Scottish Rifles two years ago.

—General sympathy will be felt with Professor BAYLEY BALFOUR, Regius Keeper of the Royal Botanical Gardens, Edinburgh, in the loss of his only son, Lieutenant ISAAC BAYLEY BALFOUR, who was killed in action at the Dardanelles on June 28. Lieutenant BAYLEY BALFOUR, who was 25 years of age, was gazetted to the 14th Royal Scots in January last, but was attached to the 1st Battalion King's Own Scottish Borderers when he met his death in the service of his King and country.

—Private JOHN STEWART, 3rd Batt. Scots Guards, has been severely wounded in the right leg and arm, and also in the back, in action in France. Private STEWART is a native of Broughty Ferry, and was in the employment of Mr. G. D. PURDIE, seed merchants, Glasgow, when war broke out.

NATIONAL DIPLOMA IN HORTICULTURE.—The 1915 examinations for the National Diploma in Horticulture—established by the Royal Horticultural Society in conjunction with, and by the approval of, H.M. Government—were held at the Society's gardens at Wisley in June. At their meeting on Tuesday last the Council approved the recommendations of the examiners that the diploma should be bestowed upon the following,

who have satisfactorily passed the final examination:—Section I.—CHISLETT, W., Oakleigh, Bishopsworth, nr. Bristol; COPE, GERTRUDE, Manor House Gardens, Northfield, Birmingham; CORNELIUS-WHEELER, SYLVIA E., Elmwood School of Gardening, Cosham; COSTIN, F. W., Clemsford, Shinfield, Reading; CRISP, WM. C., Woodcote Grove Cottage, Coulsdon, Surrey; GREEN, JOHN JAMES, Higher King Street, Hurst, Ashton-under-Lyne; JONES, H. L., The Gardens, Clerk Hill, Whalley, nr. Blackburn; MELLES, ALFRED B., 39, Bushwood Road, Kew, Surrey; STEWART, W. M., Oakleigh, Bishopsworth, nr. Bristol; TITCHMARSH, C. C., R.H.S. Gardens, Wisley, Ripley; WHITE, WM. C., 46, Frederick's Road, Beccles, E. Suffolk. N.B.—The successes in other sections will be sent to the Press as soon as they are communicated by the respective examiners. Further, the following candidates satisfied the examiners' requirements in the preliminary examination:—Division A.—TURNER, A. D., Madryn Castle Farm School, Pwllheli, N. Wales. Division B.—GIBSON, ROBERT, The Spital Gardens, nr. Hexham; GUNNELL, EDNA M., Horticultural College, Swanley, Kent; PAYNE, THOS., 223, Bramford Road, Ipswich. Division C.—HENRY, DAVID G., 3, Meadowbank Crescent, Edinburgh; MACEY, ARCHIBALD, Rufford Abbey Gardens, Ollerton; MOODY, ALFRED B., 28, Drake Street, Enfield; SIMMS, JOSEPH E., 44, New Road, Grays, Essex; SMITH, HENRY A., The Castle Gardens, Bothwell, Lanarkshire; THURPP, HILDA M. B., 24, Woronzow Road, St. John's Wood, N.W. These candidates are accordingly eligible to take the final examination in 1916 if they have then spent six years in regular garden work, or as soon thereafter as they can satisfy this requirement. W. Wilks, secretary.

NATIONAL SWEET PEA SOCIETY'S OUTING.—The members of the National Sweet Pea Society had their annual outing on Wednesday last, visiting the trials at Boyton Hall, Roxwell, near Chelmsford, and the nurseries of Messrs. ALEX. DICKSON AND SONS and Messrs. DOBBIE AND CO., Marks Tey. On reaching Chelmsford by rail the journey to Boyton Hall was completed in motor conveyances, and the trials were the first objective. Notwithstanding the unfavourable season, the plants had grown well, and it was the general opinion that the trials were satisfactory. The four certificated varieties claimed most attention; Tea Rose was the most admired, and appeared even better than at the show. Besides the trial rows there were several acres of Sweet Peas growing for seed, so that there was plenty at Boyton to interest the visitors. After lunch on the lawn a start was made for Marks Tey and Messrs. DICKSON'S nursery was soon reached. Here the plants grown specially for exhibition blooms were in superb condition. Messrs. DOBBIE'S establishment adjoins, and the visitors were conducted through the vista of Sweet Peas six hundred feet long, where the plants are grown on single stems, and through the "seed" plots, which include a representative collection of the best varieties. Tea was provided by Messrs. DOBBIE and DICKSON, at which about 80 were present, bringing to a close a very pleasant and instructive day.

INSPECTION OF MANCHESTER CITY PARKS.—Mr. W. W. Pettigrew, Chief Officer of the Manchester City Parks, informs us that the chairman of the Parks and Cemetery Committee (Alderman Harrop) has issued invitations to the members of the Committee and others to a visit of inspection of certain parks and recreation grounds on the northern side of the city on Monday next, the 19th inst. The Committee will assemble in the No. 1 Committee Room, Town Hall, at 9.50 a.m., and will leave the Town Hall at 10 a.m. on that day, returning to the Town Hall in time for luncheon, which will be provided at 1 p.m. At 2.15 p.m. the Committee will

leave the Town Hall and continue the inspection of the parks, and will arrive at Heaton Park about 5 p.m., where tea will be served.

PROSPECTS OF THE CROPS.—The monthly agricultural report of the Board of Agriculture and Fisheries for July states that summarising the returns and expressing an average crop by 100, the condition of the crops on July 1 indicated probable yields which may be denoted by the following percentages:—Wheat, 98; Barley, 90; Oats, 90; Beans, 98; Peas, 95; Potatoes, 95; Mangold, 96; seeds hay, 89; meadow hay, 79; Hops, 86.

MECONOPSIS.—The *Kew Bulletin* (No. 4, 1915) is almost wholly taken up with "Some Additional Species of *Meconopsis*," by Sir DAVID PRAIN—a very modest title

indicates that in 22 per cent. of the species the petals are yellow with variation in shade on the one hand to ivory-white and on the other to orange. Seventy-eight per cent. of the species are blue with variation in shade on the one hand to indigo or violet, and on the other to purple or red. . . . But with all this variation there is no instance, so far as is at present known, of a species in which the petals are sometimes yellow, at others blue, or purple, or red." It may be added that *Cathcartia* is here reduced to *Meconopsis*.

THE JAPANESE VINE OR CREEPER.—In 1910 (*Gardeners' Chronicle*, December 10, 1910, p. 430) we put on record some observations on the growth and size of the Japanese Creeper (*Ampelopsis tricuspidata*, syn. *Parthenocissus tricus-*



FIG. 13.—ANDROSACE BULLEYANA: COLOUR OF FLOWERS CINNABAR-RED. (See p. 44.)

for what may be termed a synopsis, if not a monograph, of this beautiful Asiatic genus of Poppies. Forty-three species are defined, which is more than four times the number known at the time of the publication of FORBES and HEMSLEY'S *Enumeration of Chinese Plants*. Eleven species are here described for the first time. Apart from descriptions, the author gives much interesting historical matter and critically discusses the limitation of species and varieties and hybrids, supplemented by references to all published figures. It may be safely assumed that this genus, so rich in unusual colours among Poppies, has a future before it in our gardens. Interesting from this standpoint are the author's notes on coloration in the genus:—"The experience of the past twenty years in-

pidata, *Ampelopsis Veitchii*), more especially in relation to a remarkable specimen of this climber growing on a terrace of houses, facing east, in the Steyne, Worthing. At that date the horizontal spread of the plant in question was estimated at fifty yards. This plant is still flourishing and has made further extensions, covering the whole front above the first storey of six houses of four storeys, and in addition a large space on the side of the hotel at the sea end of the terrace. It has not only reached the eaves; it has also climbed over the gutters and is ascending the roofs. We now learn that this wonderful creeper was nourished in its early years with bullock's blood! There are several other examples in Worthing of the Japanese creeper having nearly equal horizontal exten-

sions. In one instance, near the Homefield Park, the vine covers the fronts of six cottages and both fronts of a corner shop, as well as the side of the other end cottage. Estimating the frontage of each cottage at fifteen feet, and including the extensions, we have a total of about 130 feet. This example is also on an eastern aspect. In another part of the town there is a similar, though somewhat smaller, specimen on a western aspect.

THE BIRD AS A GUANO PRODUCER.—Mr. JAMES BUCKLAND, writing on the value of birds to man, in the *Report of the Smithsonian Institute*, states that the present enormous trade in fertilisers owes its origin to the bird, for the fertilising properties of the phosphoric acid and nitrogen contained in fish was not recognised until guano—which is the excrement of sea birds mixed with fish—became a stimulus to intensive agriculture. The value of guano as a fertiliser was known to the people of Peru in the time of the Incas, though the nineteenth century had dawned before the information was carried to Europe by Humboldt. Under the rule of the monarchs of old Peru the birds were rigorously protected and the guano deposits carefully guarded. Three centuries later these protective measures materialised in a source of revenue to the country. Generation after generation of sea birds had placed on their breeding grounds deposits of guano which, in 1853, were estimated by the Peruvian authorities to be worth \$620,000,000. It is our pleasure to think of the Incas as barbarians and to look upon their times as dark and rude. In our own enlightened age we allow the agents of the millinery interest to kill at one fell swoop over a quarter of a million sea birds on an island valuable for its guano deposits.

VEGETABLE AND FRUIT CROPS IN HOLLAND.—The Board of Agriculture and Fisheries has received the following report on the condition of vegetable and other crops in Holland from his Britannic Majesty's Consul-General in Rotterdam. Most varieties of Beans are good. Prospects for Peas are good in the north, but only moderate in the south of the country. Canary-seed varies from moderate to good. The crop of Caraway will probably be below the average; conditions are moderate in North Holland, but good elsewhere. Mustard-seed is generally satisfactory. Prospects for Potatoes are on the whole good, although there are some complaints of irregular development, and night frosts have done some damage. Onions vary from moderate to good, and Chicory, which is being more largely cultivated this year in South Holland, offers good prospects. In Zealand his Majesty's Consul at Flushing reports fruit seems to have suffered somewhat from frost. Cherries, Plums and Black Currants will not yield as well as was at first expected. Pears have suffered from want of rain. Red and White Currants, Raspberries and Strawberries promise well. His Majesty's Vice-Consul at s'Hertogenbosch states that in his district "Bellefleur" Apples promise a big crop, but other kinds will be less abundant. Raspberries and Cherries afford good prospects, Plums and Gooseberries pretty good while those for Pears are bad. In the same district it is expected that Apples and Pears will be dear.

A WORD TO THE JUDGES OF ROSES SEVENTY YEARS AGO.—You may believe me when I say I give you full credit for a desire to do strict justice to both exhibitors and the funds of the Horticultural Society. At the last meeting at Chiswick I think you ought to have awarded my collection of Roses the gold medal, and I will tell you why. The difficulty of making a fine display was owing entirely to the season. This was evident from the exhibition of cut blooms, which, perhaps, was never so hard a task as on June 21. Again, it is thought fair that amateurs should be required to produce but

half the quantity nurserymen do. Now, double my twelve plants, and I am sure you will agree with me that they would have equalled any exhibition made by my friends the competing nurserymen, to one of whom (LANE) the G.B. was awarded. And, again, why had my gardener no competitor? Because no other amateur had twelve plants to bring. I am sure if you knew me you will give me credit for only a right motive in thus directing your attention to your award. It is exceedingly discouraging to exhibitors, after struggling against the difficulties of the season (over which they have no control), and which have proved insurmountable to their brother competitors, to receive a medal which conveys censure rather than approval. I throw these remarks before you for your consideration. If I am right I am sure you will allow them to have weight; if I am wrong I have laid my opinions before you in a spirit you cannot object to. As conscientious judges you have a difficult task: so have we as exhibitors, and you will understand me when I say, upon all occasions, when the season has been averse to our productions, we like to have competitors. Had we been favoured with two more exhibitors on the occasion I allude to, I think J. Dobson's name would have figured in the Gold Banksian list. *E. Beck.* (We certainly should not have made the award of which Mr. B. complains.) *Extract from the Gardeners' Chronicle, July 5, 1845.*

NEW CHINESE COTONEASTERS.—Of the shrubs introduced from Western China by WILSON the most successful perhaps as garden plants belong to the Old World genus *Cotoneaster*. According to the *Bulletin of Popular Information* issued by Arnold Arboretum, U.S.A., at least eighteen of these species are hardy in the Arboretum, and several of the plants have now grown large enough to show their habit, the beauty of their flowers and fruits, the brilliancy of their foliage and their ability to adapt themselves to the peculiarities of the New England climate. The most showy species now in flower are *C. multiflora* and its variety *calocarpa*, and *C. hupehensis*. *C. multiflora* is a tall shrub with slender, wide-spreading, gracefully arching, bright chestnut-brown stems and branches, dull pale grey leaves, white flowers half an inch in diameter borne along the whole length of the branches in compact clusters on short lateral twigs, and black fruits. *C. multiflora* is a widely distributed and common plant in Southern Siberia and Northern and Western China, and has been in cultivation for several years. The variety, which has larger fruits, was discovered by WILSON near Sung-pan Ting in the Minn valley. *C. hupehensis* is perhaps even more beautiful as a flowering plant than *C. multiflora*, for although the white flowers are smaller they are less covered by the smaller leaves. It is a large, wide-spreading shrub with very slender arching stems and branches which are now so covered with flowers that from a distance it is hard to realise that it is a *Cotoneaster* and not a *Spiraea*. The fruit is bright red and very beautiful. *C. foveolata* is a large vigorous plant with stout arching stems from 6 to 10 feet high, large thin leaves dark green and lustrous above and pale below with prominent veins deeply impressed on the upper surface. The flowers are small, globose and red, in compact clusters, on stalks much shorter than the leaves by which they are a good deal hidden. The fruit is black and lustrous. The greatest beauty, perhaps, of this plant is in the autumn colour of the leaves, for after the leaves of most American shrubs have fallen those of this Chinese *Cotoneaster* change to brilliant shades of orange and red. There are few more beautiful autumn plants in the Arboretum. Something like *C. foveolata* in the size and colour of the flowers and in the shape of the smaller leaves is a variety of the North China *C. acutifolia* from the borders of Tibet (var. *villosula*) which is also in flower. This is a dwarfier and more compact shrub than *C. foveolata*, with black fruits and bright

autumn colours. Another set of these plants is distinguished by small dark green leaves, small red flowers and red fruit. The best known of these, *C. horizontalis*, has been in cultivation now for several years and is not rare in European gardens. It is a low shrub with wide-spreading branchlets which when trained against a wall grow several feet tall, but untrained form a dense mat of 2 or 3 feet high and sometimes 6 or 8 feet in diameter. In this climate the leaves remain on the branches without change of colour until early winter, but in milder climates do not fall until the spring. *C. divaricata*, which is also in flower, is a larger plant with wide-spreading stems forming a rather open head, and bright red fruit. From this the related *C. nitens*, which is a smaller shrub, differs chiefly in its more compact habit and reddish black fruit. Distinct with prominent stems forming mats only a few inches high are *C. adpressa* and *C. microphylla*. These are useful little plants for the rock garden and for the edging of garden walks. Several of the Chinese *Cotoneasters* are in the general shrub collection and on Hickory Path, but the best specimens are in the Chinese shrub collection on the southern slope of Bussey Hill, where these plants have been growing for four years in an exceedingly exposed position and without protection.

CURE FOR MANGE IN HORSES.—The *Queensland Agricultural Journal* recommends the following preparation for the cure of mange in horses:—Boiled linseed oil, 1 pint; sulphur, 1 lb.; spirit of tar, 2 oz. First mix the oil and sulphur, then add the spirit of tar, and mix well. Apply with a hard brush or with the hand. Another recipe is a teaspoonful of carbolic acid to a pint of lard, stirred in and well mixed.

PUBLICATIONS RECEIVED.—*Report and Balance Sheet of the Kirstenbosch National Botanic Gardens, Cape Town, S. Africa.*—*A First Book of School Gardening.* By Alexander Logan. (London: Macmillan & Co.) Price 1s. 6d. net.—*Sugar-Cane Experiments in the Leeward Islands; Report on Experiments Conducted in Antigua and St. Kitts in the season 1913-14.* (Barbados: issued by the Imperial Commissioner of Agriculture for the West Indies.) Price 1s.—*The Annual Report of the Agricultural and Horticultural Research Station, Long Ashton, Bristol, 1914.* (Bath: The Herald Press.)—*Investigations on Potato Diseases and The Spread of the Celery Leaf-Spot Disease by the Use of Affected Seed and Its Prevention.* By Geo. H. Pethybridge. (Reprinted from the Department of Agriculture and Technical Instruction for Ireland's Journal, Vol. XV., No. 3, April, 1915, and Vol. XIV., No. 4, July, 1914.)—*Typical Flies: a Photographic Atlas of Diptera, including Aphaniptera.* By E. K. Pearee. (London: Cambridge University Press.) Price 5s.—*Russia and Democracy: the German Canker in Russia.* By G. de Wesselitsky, with Preface by Henry Cust. (London: William Heinemann). Price 1s.—*Scheme of Agricultural Education to be Carried Out by the Lancashire Education Committee, Agricultural Department, Preston.*—*Some Observations on the Study of Plant Pathology.* By George Massee. (Reprinted from the Journal of Economic Biology, June, 1915.)—*Larvae of the Prianiinae.* By F. C. Craighead. (Report No. 107 of the United States Department of Agriculture. Washington: Government Printing Office.)—*The Sharp-Headed Grain Leafhopper.* By Edmund H. Gibson; and *Botanical Characters of the Leaves of the Date Palm Used in Distinguishing Cultivated Varieties.* By Silas C. Mason. (Bulletins No. 254 and 223 of the United States Department of Agriculture.)—*A New Leaf and Twig Disease of Picea Engelmannii.* By James R. Weir; *A New Wheat Thrips.* By E. O. G. Kelly; *A Contribution to the Life History of Spongopora subterranea.* By L. O. Kunkel; *Some Sugar-Cane Root-Boring Weevils of the West Indies.* By W. Dwight Pierce. (Reprints from Journal of Agricultural Research, Department of Agriculture. Washington: Government Printing Office.)

DAVIDIA INVOLUCRATA.

DAVIDIA INVOLUCRATA is one of the most striking novelties introduced from Western China during recent years. The tree was first discovered in 1871 by Abbé David, and in 1897 Messrs. Vilmorin, of Paris, received seeds from Père Farges. From these seeds a single plant was raised, and first flowered in M. Maurice de Vilmorin's gardens at Les Barres in 1906 (see *Gard. Chron.*, June 2, 1906, p. 346, fig. 138). In 1899 Mr. E. H. Wilson sent a large consignment of seeds to Messrs. James Veitch and Sons, from which thousands of plants were raised at the Coombe Wood nursery. Many of these plants are now grow-

with a pyramidal habit. The inflorescence is supported on slender stalks and is remarkable for the two bracts (one larger than the other) which surround the small, dense heads of insignificant flowers. The largest bract is from 6 inches to 8 inches long, and from 3 inches to 3½ inches broad, the smaller one 3 inches to 4 inches long and 2½ inches broad. These at first are cream-coloured, but when fully developed become pure white. The leaves somewhat resemble those of the common Lime and are from 5 inches to 6 inches long, 3 inches to 4 inches broad, dark green on the upper surface, and slightly glaucous beneath.

The plant grows best in a well-drained, loamy soil, and is readily increased from cuttings made from half-ripened shoots. *W. T., Kew.*

that the fruit is not nearly of the full size, and the yield is correspondingly small. The rain of the last week of June did some good, but there was not a quarter as much as was needed to get well down to the roots of fruit trees.

DAMAGE BY THE APHIS.

Last month it was stated that the aphid attack on Apples was the worst and most general that I had ever seen; but the signs of the damage inflicted became very much more striking towards the end of June. The species most in evidence was the rosy aphid, *A. sorbi*, nearly all of which have now become winged insects, and have migrated from the Apple trees. They have left behind great quantities of curled and withered leaves, twisted shoots, and hopelessly stunted and dirty fruit. At least half the crop on many varieties has been more or less spoiled by the pest, a large proportion having been entirely withered with the leaves surrounding the trusses. There will be such a crop of "scrumps," as was never seen before. In the worst cases the trees look as if a fire had swept through the portions of the orchard in which they are growing. The heavy expense of spraying against the pest was mere waste of money, sprayed trees being now no better in appearance than test trees left unsprayed. Trusses and shoots withered by brown rot, so far as they have not been cut off and burnt, add to the devastated appearance of the trees. By far the greatest damage is that which has been done to comparatively young trees, many of which have been so badly injured that the branches will need to be cut back nearly to the trunks next autumn, and even then, it is to be feared, not a few will be permanently crippled. Some young trees similarly attacked three years ago are mere dwarfs, and will never be of even fair size. Plums, which are bearing hardly any fruit, are almost free from the aphid, which has the habit of appearing where it can do the greatest damage. There is more of the pest on Black Currants than usual; but it is a curious fact that the dark olive-green aphid which has infested my Boskoop Giants in previous seasons has not appeared this year. This species, which infests the stems just under terminal bunches of leaves, causing them to turn over in umbrella form, appeared to be a special pest of my own, as I have never seen or heard of it outside my orchards, and it is unknown to English entomologists.

By the way, the woolly aphid, misnamed "American blight," which has been troublesome previously on only three or four varieties of Apples in my orchard, is more in evidence this season than it has ever been before.

A SCAB SEASON.

Last month the extraordinary attacks of brown rot and powdery mildew on Apples were mentioned. Now there is further to be noticed an exceptional prevalence of scab. As a rule, this highly injurious fungous disease has affected only a few of the varieties of Apples in my orchards, namely, Cox's Orange Pippin, Allington Pippin, Lady Sudeley, Lord Grosvenor, Worcester Pearmain, Dumelow's Seedling and Duchess of Oldenburg. Irish Peach, the worst of sufferers, has been top-grafted with Bramley's Seedling. This season, for the first time, Beauty of Bath has been attacked by scab, many Apples being already badly cracked by the disease. The other varieties were sprayed with lime-sulphur, Duchess of Oldenburg, as the greatest sufferer usually, having been done twice. The spraying appears to have been beneficial, except to Cox's Orange Pippin and young Allingtons. It has caused russetting of Cox's Orange Pippin, from which a control tree, not sprayed, is quite free, and there is no scab on this tree. Young Allingtons have had their foliage scorched; but this is possibly due to the inclusion of some ammonia with the lime-sulphur, in the hope of killing aphid. There was only one quart of ammonia

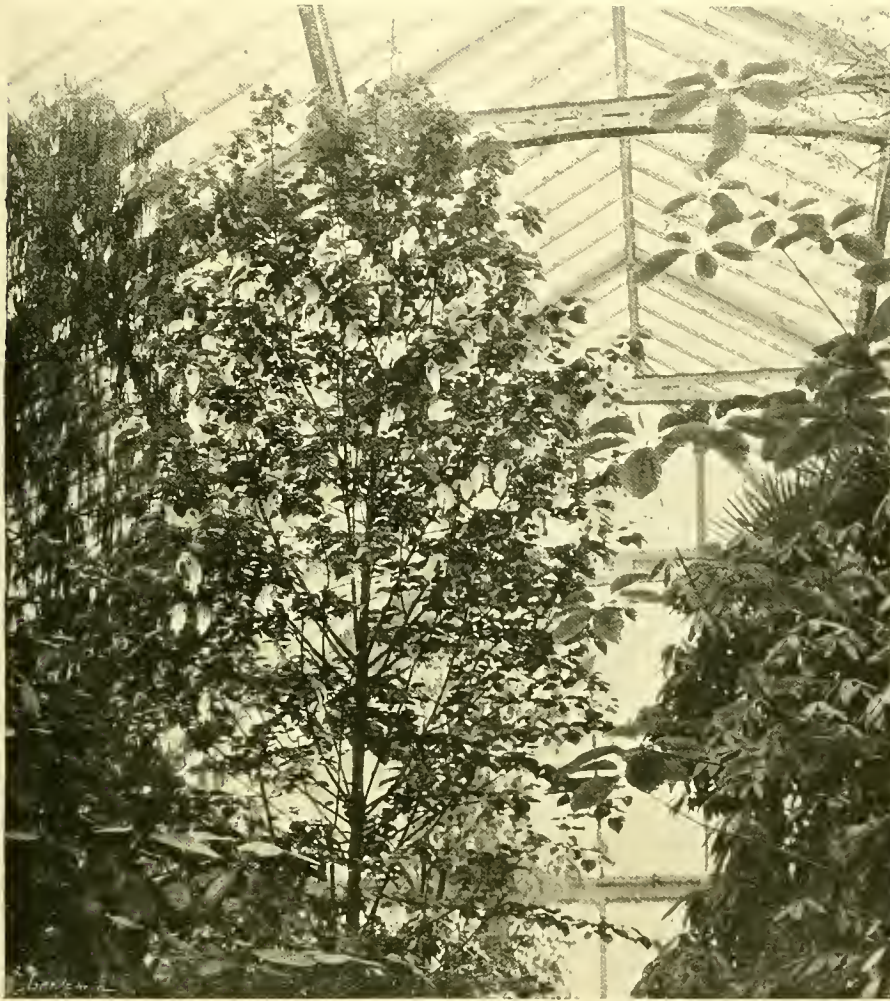


FIG. 14.—FINE SPECIMEN OF *DAVIDIA INVOLUCRATA* IN THE HIMALAYAN HOUSE, KEW.

ing out-of-doors in various parts of the British Isles, and some are attaining the flowering stage.

During the latter part of May a tree of this *Davidia* growing in the Himalayan House at Kew Gardens was in flower, there being about 200 inflorescences (see fig. 14). The snowy-white bracts mingled with the young, pale-green leaves gave the tree a striking and beautiful appearance. The tree was received as a small plant from Messrs. Vilmorin in 1901. It was planted out in a border and has grown to a height of 30 feet. It first flowered in 1913, when only one inflorescence was produced, but during May, 1914, there were seven flowers, resulting in the production of two fruits, which reached maturity early this year.

Davidia involucrata forms a medium-sized, much-branched tree, from 30 feet to 50 feet high,

THE MARKET FRUIT GARDEN.

DROUGHT in June, after one of the driest of springs, was damaging to fruit of all kinds, and particularly to Strawberries, Raspberries, and Currants. Before the 27th only 0.27in. of rain fell at my station, on two days, and the only substantial fall, just half an inch, came on the 27th, followed by a trifle of 0.06in. up to the end of June. There were only five rain days, giving a total of 0.83in. for the month. Strawberries, which are grown by me only for private use, were so dried up that there was not a gallon of fruit on two somewhat large heds, except what blackbirds got through the netting before the fruit was ripe. Raspberries, for the same reason, are very small, while half a considerable number of canes planted last winter have been killed by the drought. Black Currants were stunted, so

to forty gallons of lime-sulphur wash, but possibly this, combined with some of the sulphur, produced sulphate of ammonia, which certainly does scorch foliage. Curiously enough, however, this combination has not harmed mature Allingtons, or mature Coxes or Worcesteres, young or old. In spite of the double spraying of Duchess of Oldenburg, there is much spotting of the fruit by scab. This variety is under sentence of top-grafting, where that operation has not already been carried out.

APPLE THINNING.

There was more need even than there usually is for the thinning (which my workpeople curiously term "slighting") of Apples this season. Great good was done by stripping the curled and aphid-infested leaves from off the clusters of fruit, as well as by taking off the Apples infested with saw-fly maggots, and the small and surface-eaten ones, and placing them in bags to be burnt. At the same time spurs and shoots affected by brown rot or powdery mildew were taken off the trees and placed in the bags. Most of the trusses had been so much weakened by the aphid that the thinning had to be exceptionally severe. My instructions to the women who have been, and still are, doing the work were to leave only one Apple out of a cluster on trees well set with fruit all over, never more than one out of a feeble lot, and not even one unless it was sound. On vigorous trees two Apples on a truss were allowed to remain, if they looked like coming to full size, and the crop not threatening to be too full, particularly in the case of dessert Apples, for which size is of less importance than it is for cookers. It is difficult to induce the women to thin severely enough. They have not judgment enough to do more than follow definite instructions. If I did the work myself, I should take off thousands of the small singles which they leave. Some varieties thin themselves, while in others the fruitlets stick on so tightly that they need to be cut off with scissors, to avoid the breaking off of whole trusses. In some of the worst cases of aphid infestation the trees were so much covered with the honeydew secreted by the insects that the women's dresses quickly became sticky and dirty all over. This has never happened before in my experience. Worcester Pearmain, Beauty of Bath, Lady Sudeley, and Lane's Prince Albert were among the worst of the varieties in this connection.

APPLES THAT THIN THEMSELVES.

Varieties of Apples that thin themselves nearly or quite sufficiently include Charles Ross, Duchess of Oldenburg, Queen, Warner's King, Lord Derby, and Royal Jubilee. They might be benefited by a little manual assistance in the removal of superfluous fruit, but there are so many other varieties which need artificial thinning much more urgently that I usually leave them to thin their own fruit. The natural thinning consists, generally, in the pushing off of all but the biggest of the Apples on a truss. Some of the varieties named do this more completely than others. The work takes a long time, and when the cookers are left till the fruit is getting somewhat large, the best of the thinnings may be sold for enough money at least to pay the expense of the work.

CROP PROSPECTS.

Deficiency in the cropping of Plums and Black Currants has been alluded to above. That of Pears is fair to good, and Cobnuts and Filberts promise well. Apples would have been at least an average crop in my orchards if it had not been for the aphid. As it is, my oldest trees, planted fifteen years ago, will yield well as a whole, although there will be an undue proportion of "scrumps" on some of them. Worcester Pearmain was so badly punished by the aphid that there cannot be a fair yield of fruit of even moderate size. Varieties planted nine or ten years ago vary greatly. A few, including Bramley's Seedling, Lord Grosvenor, Golden Spire, Charles Ross, Duchess of Oldenburg,

Royal Jubilee and Lord Derby are cropped fully, while Lane's Prince Albert has half a very full setting spoilt by the aphid. Cox's Orange Pippin, Allington Pippin, Beauty of Bath, Early Julyan, Domino, and Warner's King are bearing partially and thinly, and Bismarck and Gascoyne's Scarlet are almost devoid of fruit. Nearly all varieties planted six to seven years ago are either practically fruitless or very lightly cropped. Some of them blossomed but slightly, but more have had a fair setting spoilt more or less fully by the aphid. *A Southern Grower.*

ANDROSACE BULLEYANA.

This Chinese species (see fig. 13) is a biennial, forming the first year a rosette of sessile, spatulate leaves which are glaucous and have ciliate margins. The second year the plant produces numerous scapes with umbels of cinnabar-red and vermilion coloured flowers. Mr. G. Forrest found the plant growing wild in China on dry, rocky hillsides, on the descent from the Chung-tien plateau to the Yangtze valley, at an altitude of 10,000 feet, in north-western Yunnan. *Androsace Bulleyana* is not an easy plant to



FIG. 15.—ROSE HEDGE AT LISTER LODGE; ALDENHAM, FORMED OF THE VARIETY CONRAD FERDINAND MEYER: COLOUR PINK WITH SILVER SHEEN.

manage through the winter, and is liable to fail without apparent reason. It does not appear to be hardy, for while plants at Kew wintered well enough in boxes in a frame from which frost was excluded, others in pots in an ordinary cold frame suffered many casualties. The most suitable soil is well-drained loam. On investigating the plant in the Kew herbarium I failed to find any marked differences between *A. Bulleyana* and *A. coccinea* Franchet; the differences, if any, are certainly insignificant. *W. Irving.*

THE ROSARY.

A BEAUTIFUL ROSE HEDGE.

I ENCLOSE a photograph (see fig. 15) of a remarkably fine hedge of Rose (Conrad Ferdinand Meyer) in Dr. A. MacConkey's garden, Lister Lodge, Aldenham. I have admired this hedge for several years past; when at its best it presents an appearance unequalled by anything of its kind I have seen. The colour of the blooms is flesh-pink, and the flowers have a strong perfume. Those who contemplate planting a Rose hedge should consider the merits of this beautiful rugosa hybrid. *Edwin Beckett.*

HOME CORRESPONDENCE.

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

FREMONTIA CALIFORNICA.—A plant of *Fremontia californica* has flowered very freely in these gardens, the whole of the branches having been quite covered with the large yellow flowers. The specimen is eight years old, and occupies a very dry position at the foot of a south wall, and the growths cover a wall space of about 50 square feet. *W. Auton, Pyrford Court Gardens, near Woking, Surrey.*

CHEIRANTHUS ALLIONII.—Can any reader throw light on the origin of this plant? Its name does not appear in the *Index Kewensis*, but in the *Kew Hand-list* (1902) it is given as *C. Allionii*, Hort. *Cheiranthus Allionii* is being advertised as a "Siberian Wallflower." Is there any ground for this title? It appears to be identical with the plant I have known for the past 30 or 40 years as *C. Marshallii*, which, however, is not the *C. Marshallii*, Stark. of the *Index Kewensis*, there referred to *C. ochroleucus*, a smaller plant with primrose-yellow instead of orange-coloured flowers. Whatever its origin, it is a most valuable plant for spring bedding, remaining in bloom long after the common Wallflowers, and, if possible, even more fragrant though with a quite distinct

smell. It requires the same treatment as the common Wallflower. *Alfred O. Walker, Ullcombe, Kent.*

THE WALL RUE.—Referring to my note on p. 21, on my return from the Holland Park Show I came across a decidedly unexpected Fern habitat. On the west side of the park are some new streets, in one of which half the length is occupied by large mansions, and on the rest are piles of builders' rubbish of several years' standing. These are much overgrown, and among other plants I noted two or three large and healthy patches of Bracken (*Pteris aquilina*). Further, I learn from Mr. Doncaster, of Watkins and Doncaster, that many years ago he found roots of the Wall Rue (*Asplenium ruta muraria*) on Westminster Abbey. *J. Edmund Clark.*

NEW POTATOS.—The appeal by the Board of Agriculture, urging the public to refrain from consuming the new crop of Potatoes while so large a stock of old Potatoes remains available and in good condition for the table, deserves the careful attention of everyone at the present moment. May I, however, remind your readers that the old Potatoes on hand can also be put to another use? In response to the advice given last August considerable quantities of new Potatoes were then planted which gave excellent returns, and visitors to the Royal Horticultural

Society's exhibition in November last saw splendid examples of Potatoes grown from tubers planted in August. But even better results can be assured if old Potatoes are planted during the next four weeks. All that is needed is to choose the soundest tubers and either plant them at once on any freshly-dug ground or set them up on end for a fortnight to encourage "sprouting," and then plant. New Potatoes in November and December are always acceptable, and the addition to the national food supply would be very great if the present planting of old Potatoes were generally adopted. Whether the public buy new Potatoes now, or not, it is almost certain that growers who depend upon the early market for the remunerative prices obtained will still lift their crops, as in many cases the land thus cleared is wanted immediately for sowing some "catch crop," which in its turn helps to swell the national food supply. The public cannot be too often reminded that great additions to the food supply can be ensured by sowing in July and August many valuable vegetable crops, such as Cabbage, Carrot, Onion, Lettuce, Dwarf Beans, Globe Beet, Peas and Spinach. *Arthur W. Sutton.*

THE STERILITY OF LILIUM CANDIDUM (p. 20).—In 1905 in a garden where the soil was rather poor and shallow (not more than a foot deep) on chalk *Lilium candidum* set seed fairly freely, but only from the flowers hand-fertilised with pollen from other plants. Speaking from memory, at least half the flowers so fertilised set seed, but only one pod was large and full. The seed collected was good and about 500 germinated. The border in which the plants were growing was not especially poor, and I thought possibly the great amount of lime in the soil was the condition favourable to seeding, as *L. candidum* was always very strong and healthy in that garden. *A. J. Bliss.*

EXPERIMENTS WITH SILVER-LEAF.—In reply to *M.* (p. 11), the manures were sown on the surface; but the land was hoed sooner or later afterwards. I have never tried the burying of sulphate of iron close to the roots of the trees. As a matter of fact, I had no expectation of any benefit from sulphate of iron because my soil and subsoil contain an excess of iron, my district being one in which iron was dug in past times for smelting. *A. Southern Grower.*

THE CONFESSIONS OF A NOVICE (see p. 3).—I have clumps growing here of Cottage and Darwin Tulips that have been unmolested for eight years and they still flower well. Clumps of *Tulipa Gesneriana* have been undisturbed twenty years and show no diminution of vigour in either growth or flower. *A. N.* raises an important point about the germination and growth of seedlings, especially when sown in the open. All too often gardeners sow first and water after, whereas they should reverse the order. Here is a good illustration. Take a bed of seedling Wallflowers sown in May or June, when the soil is too often quite dry; the seed is sown on the dry soil and is covered with similar material. The seeds do not show signs of life for weeks. Watering is then started and the surface soil washed off, the result being a hard-baked surface with a few struggling plants around the edges of the bed where the water collected. The seedsman receives a letter of complaint that the seed was bad! The correct method is to break up the soil deeply, well soak it overnight and shade it on the next day to prevent the rapid evaporation of moisture by exposure to sun and air. As the soil becomes dry enough to avoid stickiness in working, make the surface fine, sow the seed *thickly*, and cover with soil of the same state of moisture. Shade the bed with mats or green boughs until the seedlings show through the surface, when the shading should be gradually removed. In this way good germination will have been obtained without recourse to watering since sowing the seed, assuming, of course, that the seed is good. *E.*

—The apposite remarks on seed-sowing made by the writer of the article signed *A. N.* have set me thinking. Whilst I share his view that seed is often sown too thickly I am inclined to think

that in some cases thick sowing has advantages. Thus it seemed to me whilst inspecting the Pea trials held at Wisley this year that the plants at the end of each row which had been thinned for purposes of detailed observation were, generally speaking, later than the more thickly sown plants which made up the rest of the row. It struck me that this is not in discord with expectation, and, if so, there is something to be said for thick sowing in certain cases, as, for instance, when earliness is required. *E. A.*

CATERPILLARS AND THE SPARROW.—The real interest of Mr. J. C. Grimwood's notes (Vol. LVII., pp. 332 and 358) lies in the evidence, albeit circumstantial, I fear, that the sparrow is a foe to the brown tail moth. The larvae of the latter are to be seen in thousands sometimes on bushes round the Essex coast, and as they possess severe urticating properties, it is comforting to know that any other bird than the cuckoo (which is well known as a destroyer of hairy larvae) is able to cope with them. It is a pity that Mr. Grimwood did not actually see the sparrows feeding on the larvae, but I think there is some reason to attach credence to the suggestion that they did so, as I myself have similar circumstantial evidence that they will devour the larvae of the lackey moth and the gipsy moth. A nest of the former in my garden here some years ago was suddenly devastated, and I noticed a sparrow hovering about the spot as if looking for more. I have bred thousands of larvae of the gipsy moth and turned out many moths and larvae in the garden, but not one in a hundred ever arrived at the moth stage, so far as I could see, and I have strong suspicion that sparrows devoured the young larvae. As to Mr. Grimwood's suggestion that insecticides may be responsible for the death of insectivorous garden birds, I think this only too probable. We had a robins' nest in the garden here some years ago, in which the same pair of birds brought up three broods. The first and second came off safely, but the third all died without any apparent reason, the hen bird vanished, and the cock robin was very ill for some weeks. We managed to pull him through by feeding him on winged ants (from a nest in the garden) and mealworms, but I am practically certain that this family tragedy was due to the birds having obtained insects for their young from a tree or trees which had been sprayed with insecticides. We think the cock bird survived through having eaten less of the poisoned food than the hen. *C. Nicholson, F.E.S., Hale End, Chingford.*

SOCIETIES.

THE HOLLAND HOUSE SHOW.

(Concluded from p. 30.)

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Messrs. W. Bates, G. Woodward, T. Coomber, J. Jaques, A. W. Metcalfe, J. Willard, F. Perkins, J. Basham, P. Veitch, E. A. Bunyard, F. Jordan, H. Markham, J. G. Weston, A. R. Allan, Owen Thomas, Geo. Kelf, Horace Wright, and A. Bullock.

Major WALDORF ASTON, Cliveden, Buckinghamshire (gr. Mr. W. Camm), exhibited many bunches of Black Hamburgh Grapes and Lord Napier Nectarines. (Large Silver Cup.)

Mr. S. MORTIMER, Farnham, had an imposing collection of Melon Sutton's Ringleader. All the fruits were of large size, well netted, and possessed the pleasing aroma that tells of good flavour.

Mr. MORTIMER staged several brace of the new Cucumber Mortimer's Rival, which we admired at the last Vincent Square Show, and also had many trusses and gathered fruits of a new Tomato named Tip Top. The latter is somewhat similar to Buck's Tresco in habit, but the fruits are darker in colour; they are smooth, of useful medium size, and freely borne. (Silver-gilt Banksian Medal.)

Lady WERNHER, Luton Ho, Bedford (gr. Mr. Metcalfe), sent a collection of Peaches and Strawberries. A Silver Banksian Medal and Card of Cultural Commendation were awarded.

Messrs. LAXTON BROS., Bedford, showed a collection of late Strawberries in shallow baskets. These varieties were Laxton's Latest, Utility, and Givon's Late Prolific. Adjoining the Strawberries were sprays of Currants loaded with large fruits. The varieties were Laxton's Blacksmith, White Versailles and Laxton's Perfection, a splendid red variety. (Silver-gilt Banksian Medal.)

Sir DAVID GOOCH, Bart., Hylands, Chelmsford, exhibited a splendid collection of vegetables, which displayed first-rate cultivation. (Silver Knightian Medal.)

Messrs. BARR AND SONS, Covent Garden, London, also had a collection of first-rate seasonable vegetables. (Silver-gilt Knightian Medal.)

HORTICULTURAL SUNDRIES.

This section of the show seems to receive increasing support and appreciation. In the open the most important collection was the group of antique stone and lead figures, wrought iron gates, sun dials, etc., from Messrs. T. CROWTHER AND SON, Fulham (Silver-gilt Banksian Medal). Mrs. B. GUINNESS, North Forest, Windsor Forest, sent some interesting nude studies of child figures in plaster for working in zinc and associating with formal gardening which were much admired. Mr. HERBERT JONES, Horsecombe Quarries, Bath, showed some old-world stone garden ornaments and seats. With the shallow-bedded facing stone he also put up a pleasing, simple pergola, with round columns. The stone paving set off with crevice plants materially assisted the impression of permanence that the exhibit gave. (Bronze Banksian Medal.)

INSECTICIDES, SPRAYERS, ETC.—Messrs. F. A. WHITE, LTD., Paddock Wood, showed their Abol specialities. The special syringe with angled nozzle and drip protector is a particularly useful distributor of sprays for Rose growers and amateurs (Silver Banksian Medal). The FOUR OAKS SPRAYING MACHINE Co., Sutton Coldfield, had much of interest in their pneumatic pumps, pail sprayers and undentable syringes (Silver Banksian Medal). Messrs. PATTISON, Streatham, showed their lawn sprinklers (Silver Banksian Medal). A "cascade nozzle" attachable to watering-can spouts or hosepipes from Mr. WEBSTER, Stock, Essex, seemed to have many uses, especially for rapid watering, and attracted considerable notice. Simplicity, adaptability and cheapness are all in its favour. These exhibits were out-of-doors. Under canvas were Mr. PERCY BUNYARD'S, Croydon, exhibit of fumigating and spraying compounds, etc. (Bronze Banksian Medal); Messrs. COOPER AND NEPHEWS, Berkhamsted, insecticides, weed killers, and sprays and syringes; the insecticides and washes of Messrs. JEVES', Cannon Street; the Gishurst compounds and preparations of Messrs. PRICE, Battersea, and Sanitas disinfecting powders from Messrs. SANTAS, Limehouse, E.

MISCELLANEOUS.—Messrs. ABBOTT, Southall, garden table trays, etc. (Silver Banksian Medal); THE ATLAS MANUFACTURING Co., Woodford, flower presses; Messrs. BASTIN, Queen Victoria Street, patent sunshade holder and seats; THE CABLE PRINTING Co., garden books; THE GARDEN CITY TRUG, Fleet, Hants, patent trugs (Bronze Banksian Medal); Mr. ARTHUR KEY, Norwich, lawn fertilisers; Mrs. SOPHIA MILLER, Moyleen, confections (Silver Banksian Medal); Mr. A. B. JOHNSTON, fibrous loam; Messrs. OLIVER, LTD., Old Bond Street, working gardening clothes; Miss J. S. TURNER, Arlesey, models of the Strathcona School of Gardening at Iver, Bucks; Messrs. TRUSLOVE AND HANSON, Sloane Street (Bronze Banksian Medal), and Messrs. WESLEY AND SON, Essex Street, garden publications; Messrs. PATTISON, Streatham, horse boots, etc.; Messrs. WESTMACOTT, South African produce.

GARDEN FURNITURE, FRAMES, AND GLASS-HOUSES.—The Man-o'-War teak wood garden furniture, shown by Messrs. CASTLE, Millbank (Silver Banksian Medal), and HUGHES, BOLCOW AND CO., Blyth, is too well known and tried to need comment (Silver Banksian Medal). Messrs. LIBERTY, Regent Street, showed good Japanese work, in a garden house, miniature gardens, dwarf trees, garden lanterns, and orna-

mental figures. This exhibit found many admirers (Silver Banksian Medal). The LEYTON TIMBER CO., LTD., sent samples of their rustic garden furniture and summer houses (Silver Banksian Medal). Messrs. MAGGS, Bristol, exhibited their garden seats, garden tents, etc. (Silver Banksian Medal). The patent safety ladders of Messrs. H. C. PHILCOX, LTD., Brixton (Bronze Banksian Medal), THE PATENT SAFETY LADDER CO., Peterborough, and Mr. H. C. SLINGSBY, Old Street (Silver Banksian Medal), are useful garden items. Messrs. CRISPIN JAMES AND SONS, Bristol, showed model greenhouses and frames (Bronze Banksian Medal), and the useful Robin Hood sectional boiler was also shown here. Under canvas Messrs. BARR were exhibiting their miniature folding clothes and frames, useful contrivances for small batches of seedlings and cuttings or early salads (Silver Banksian Medal).

PICTURES, ETC.—Under canvas the artistic section was well represented by the studies of gardens in oil and water colour. Miss E. M. FRASER, Queen's Gate, was given the highest award (Silver-gilt Banksian Medal). Miss H. M. BULKLEY, Holland Villas Road, showed some charming work (Silver Banksian Medal). Other contributors were Mrs. HEISCH, Stanmore (Bronze Banksian Medal); Miss E. LAMONT, Carlisle Place (Bronze Banksian Medal); Miss M. LINNELL, Adelaide Road, N.W. (Bronze Banksian Medal); Mrs. SOPHIA MILLER, Marlow (Bronze Banksian Medal); Miss PILKINGTON, Pembroke Gardens (Bronze Banksian Medal); Miss RANDOLPH, Putney (Bronze Banksian Medal); and Miss E. WARRINGTON, Streatham Common (Bronze Banksian Medal).

NATIONAL SWEET PEA.

JULY 13.—The development of the Sweet Pea is one of the greatest triumphs of contemporary gardening, and at one time the flower seemed destined to hold a position in gardens second only to the Rose. The novelties forthcoming every season met with universal admiration, and the special society associated with the flower kept pace with its protégé, each succeeding year marking further success for both. It seemed as though the possibilities of the flower had no limit. But in recent years the Sweet Pea has become a notoriously bad doer, and disappointment has arisen which is due chiefly to the mysterious complaint known as "streak." It is here that the National Society has the greatest opportunity for effective work; if this problem of how to grow Sweet Peas immune from streak were solved the flower would indeed gain in popular appreciation. In other directions the society is doing useful work. The trials are valuable, although even trials are not always conclusive, as has been pointed out on more than one occasion at the annual meetings, for varieties passed by the judges at the trials have asserted their superiority when proved in gardens.

The annual exhibition serves to bring before the public the best varieties, and stimulates interest in the cultivation of the flower. The fifteenth annual show, held on Tuesday last in the R.H.S. hall, was of average merit. The spacious hall was almost entirely filled with exhibits, making a display of colour of soft clear tones which few other flowers could rival. But there was something needed to afford relief to the brilliant flowers, such foils, for instance, as would be provided by a few Palms or Ferns. The decorations on the balcony showed how much more attractive Sweet Peas appear when suitable greenery is associated with them.

The season has been a trying one for growers, and the recent gales in various parts were responsible for some cancelling their entries at the last moment. But the show was favoured with excellent weather and the attendance was satisfactory.

AWARDS.

CERTIFICATES OF MERIT.

Victory.—A fine, bold flower of pale lavender colour, with rosy-purple sheen. Shown by Mr. ROBERT BOLTON.

Dora.—A bicolor, with rosy-red standard and cream-coloured wings, which are faintly suf-

fused with the colour of the broad upper petal. It is a garden, rather than a show, variety, for it has great decorative value. Shown by Messrs. DOBBIE AND CO.

Tea Rose.—This appeared to be the best novelty, so far, of the season. The tone is cream-buff, a very delicate shade, suggestive of the name, and the whole flower had a silky appearance as if covered with a sheen. The reddish-brown stalks are an additional attraction.

Margaret Fife.—The standards are rosy-purple and the wings deep lavender, a pleasing contrast of colouring. These two were shown by Mr. A. MALCOLM, Duns.

OPEN CLASSES.

The Classification Class was for 18 bunches, distinct, selected from the Society's classification list. Five competed. The 1st prize was awarded to flowers grown in Scotland, the successful exhibitor being Mr. J. SMELLIE, of Busby, near Glasgow. It was an easy win, and the exhibit was well staged. Outstanding varieties were Rosabelle, King Alfred, Margaret Atlee, R. F. Felton, Royal Purple, Dobbie's Cream, Hercules, and King Manoel; 2nd, Mr. WILLIAM BOND, Formby, near Liverpool, and here Hercules, Lady Miller, Lady E. Eyre, Margaret Atlee and Barbara appeared to advantage; 3rd, Mr. H. TYSON, Bedford.

Twelve bunches distinct.—This was a keenly contested class, the exhibits numbering eight. The 1st prize was awarded to F. W. FRANKS, Esq., Tonbridge, Kent (gr. Mr. W. Humphrey), for the varieties Barbara, New Marquis, John Ingman, Elfrida Pearson, Sunproof Crimson, Elsie Herbert, Lavender George Herbert, Hercules, King Manoel, Mrs. Breamore, Thos. Stevenson and Doris Usher; 2nd, Mrs. ARNOLD HITCHCOCK, Tiptree; 3rd, Major MELLOW, Goring-by-Sea, Sussex (gr. Mr. C. Alloway).

There was another class for 12 bunches, in which the "E. W. King" Challenge Cup was offered. The varieties excluded those in commerce before the autumn of 1914 or spring of 1915. Nine competed, and the best exhibit was staged by Mr. ROBERT SANDFORD, Mildenhall, Suffolk. This was a fine effort: the blooms were beautifully fresh and bright and arranged very daintily. The largest blooms were of Mrs. Cuthbertson, the expansive standard beautifully tinted with rose; Lavender Geo. Herbert, Juliet, Orange Perfection, R. F. Felton, Mrs. C. W. Breamore and Hercules are others of specially fine quality. The 2nd prize was awarded to Mr. E. BROAD, Trezunger, Fowey, for spikes of exceptional length in the stalk and fine-quality flowers; 3rd, Major LUBBOCK, Warminster (gr. Mr. J. B. Lowe).

"Burpee Cup".—There was only one exhibit in this class, and it was awarded the 1st prize. The exhibitor was Mrs. BAIRD, West Malvern (gr. Mr. J. W. James). The flowers were of good quality, but the general effect was not satisfying. The varieties were Mrs. Cuthbertson, Barbara, Lavender Geo. Herbert, King White, King Manoel, Rosabelle, Mrs. Routzahn, Sunproof Crimson and other popular sorts.

Seedlings.—Two classes were provided for seedlings, for three bunches and one bunch respectively. In the larger class one of the best exhibits was disqualified as contravening the conditions, and none of the others was considered sufficiently meritorious for an award. In the class for one bunch, Dr. HAMMOND T. HINTON, Heptsbury, Wiltshire, was awarded the 1st prize for J. B. Lowe, a large bloom, the broad standard being rosy-purple—approaching orange in the younger flowers, and pale rose-pink wings, the colours contrasting well.

DISTRICT CLASSES.

These numbered nine, one for growers in the London district, the radius being nine miles of Hyde Park Corner; one each for Scotland, Ireland and Wales; and the remaining ones for the Northern, Western, Eastern, Midland and Southern counties of England. Only amateur growers were eligible to compete. Scotland contributed two exhibits, one being of special merit. Seeing that the Sweet Pea season north of the Border is fully a fortnight later than in the South, Scotland was in a measure handicapped.

Ireland sent only one exhibit, but Irish-grown Sweet Peas have always held their own with the best from any part of the British Isles, and those staged worthily maintained that reputation. Wales always furnishes a redoubtable grower in Mr. TOM JONES, Ruabon, and he upheld the honour of the Principality in a manner worthy of a champion. There were two exhibits from Wales. But it was left for the Eastern and Southern counties to provide the best competitions, for each section was represented by seven collections from some of the best-known growers. As a guide to varieties best suited to the various areas, we give the names of those shown by the winners of the 1st prizes.

London.—Mr. W. RAVEN, Wood Green, with Dobbie's Cream, Thos. Stevenson, Royal Purple, Princess Victoria, Sunproof Crimson, Hercules; 2nd, Mr. R. BARKER, Muswell Hill.

Scotland.—1st, Mr. JAMES KEN, Stewarton, Ayrshire, for Rowena, R. F. Felton, Dobbie's Cream, Job Loader (resembles Maud Holmes), Edna May Improved and May Unwin.

Ireland.—1st, Mr. EDWARD COWDY, Loughgall, Co. Down, with Audrey Crier, King White, Marvel, Mr. C. W. Breamore, Hercules, May Campbell, Elsie Herbert and Lavender Geo. Herbert.

Wales.—1st, Mr. TOM JONES, with Agrícola, Lavender Geo. Herbert, Prince George, Dobbie's Orange, May Campbell, Duchess of Portland, Marks Tey, Mrs. C. W. Breamore and Edrom Beauty; 2nd, Mr. L. WELL, Welshpool.

Northern Counties.—1st, Dr. ROY APPLETON, Beverley, East Yorkshire, with May Unwin, Mrs. Cuthbertson, Robt. Sydenham, Royal Purple, Pathfinder, Marks Tey, Elsie Herbert, R. F. Felton and Hercules; 2nd, Mr. W. BOND, Formby.

Western Counties.—The 1st prize blooms, shown by W. PHILIP, Esq., Astley, near Shrewsbury (gr. Mr. R. Goliath), were not surpassed by any in these sections. The spikes were extra long, the massive stems bearing blooms in proportion. The varieties were May Campbell, Mrs. Damerum, Elfrida Pearson, Thos. Stevenson, Duchess of Portland, Lavender Geo. Herbert, Elsie Herbert, Marks Tey and Edna May Improved; 2nd, Sir RANDOLF BAKER.

Eastern Counties.—1st, Major E. W. DENNY, Norwich (gr. Mr. Thos. Bethell), for the varieties Mrs. Hallam, May Unwin, Knyvet Wilson, Mrs. Hallam, Mrs. House, King White, Sunproof Crimson, Rosabelle and King Manoel; 2nd, Mr. A. W. RALPH, Hempston, Bedfordshire.

Midland Counties.—1st, Mrs. JESSOP, for Lady Evelyn Eyre, Norvic, Royal Purple, Barbara, Dorothy, Hercules, New Marquis and Audrey Crier; 2nd, Mr. F. CARTER, Thorpe Mandeville, Oxfordshire.

Southern Counties.—1st, Mr. McMURDIE, Woburn Park, Weybridge (gr. Mr. A. Basile), for R. F. Felton, Don Alva, Thos. Stevenson, Marks Tey, Rosabelle, Royal Purple, Florence Wright Spencer, Maud Holmes, Mrs. W. Breamore and King Manoel; 2nd, F. W. FRANKS, Esq., Tonbridge, Kent (gr. Mr. W. Humphrey).

AMATEURS' CLASSES.

The "Blue Ribbon" of the show was the Henry Eckford Memorial Challenge Cup, and it was offered for 12 bunches, distinct, staged by an amateur. Nine competed, and Lord NORTH, Wroxton Abbey, Banbury (gr. Mr. E. R. James), proved successful, but he had no easy win, for competition was keen, the quality throughout being superb. Mr. W. H. HOLLOWAY, Post Hill, Shrewsbury, followed; and Sir RANDOLF BAKER, Bart., M.P., Royston, Blandford (gr. Mr. A. E. Usher), was placed 3rd. Lord NORTH's varieties were Rosabelle, Dobbie's Cream, E. Cowdy, Constance Hinton, Agrícola, Marks Tey, Audrey Crier, Orange Perfection, R. F. Felton, King Manoel, May Unwin and Maud Holmes. All the spikes carried four large blooms, and it was difficult to know which to admire most, the delicate blush of Agrícola, the clear pink Audrey Crier, or the deep orange-scarlet tone of E. Cowdy, whilst the paler Dobbie's Cream and the beautiful white Constance Hinton were superb. Mr. HOLLOWAY showed Lavender George Herbert, Elfrida Pearson, Hercules, Edrom Beauty and May Campbell superbly; whilst Sir RANDOLF

BAKER's vases of Audrey Crier, Marks Tey, Agrícola and Don Alva were equally fine.

The "Sutton" Cup was offered for the best exhibit of 18 bunches, distinct, and with it went the Gold Medal of the Society. Three competed, and Lord NORTH again excelled, winning easily with superb blooms of Hercules, Rosabelle, White Queen, Margaret Atlee, Maud Holmes, Dobbie's Cream, Edrom Beauty, Agrícola, Helen Williams, May Unwin, Prince Victor, Robert Sydenham, Royal Purple (a very distinct shade and beautiful in every respect), Barbara, Dorothy, King Manoel, Mrs. Jessop and Marks Tey; 2nd, Sir RANDOLF BAKER; 3rd, L. COOKSON, Esq., Wem, Shropshire (gr. Mr. G. E. Kitchen).

Prizes were offered in a class for 6 bunches of varieties introduced into commerce during the autumn of 1914 or spring, 1915. This class brought four exhibits, and the best was shown by Sir RANDOLF BAKER, who had massive spikes of Austin Frederick (lavender, with purple flush), Mrs. Damerum (cream), Alfred Watkins (lavender), Royal Purple, Norvic (white) and Pathfinder (salmon-rose); 2nd, Mr. T. JONES, Bryn Penylan, Ruabon, with taller spikes but smaller flowers, his Duchess of Portland (cream, suffused pale pink), Don Alva (lavender, with purple sheen) and Edward Cowdy (orange-scarlet) being the best; 3rd, Mr. L. WEBB, Welshpool, in whose exhibit Royal Purple and Marvel (blush) were uncommonly good.

The Bide Challenge Cup was offered for 12 varieties, distinct, open only to those who employ one gardener. It was won by Mr. F. A. BISHOP, Windsor, for good blooms of Agrícola, Mrs. Cuthbertson, R. F. Felton, Marks Tey, Audrey Crier and others; 2nd, Mr. C. HORTON, Greenford.

The "Perkin" Challenge Cup for 9 bunches, distinct, was won by Mr. W. FOWLER, Mill Hill, London, and the Breadmore Challenge Cup for 6 bunches, distinct, by Mr. PHILLIPS, Shrewsbury.

In the class for 3 bunches, distinct, the 1st prize was awarded to Mr. W. PHILIP for splendid blooms of Dobbie's Cream, Hercules and New Marquis.

Three competed in the class for 12 bunches, distinct, the 1st prize being the New Hawmark Challenge Cup and the Society's Gold Medal. Much the best exhibit of three was shown by Mr. JONES, Ruabon, his flowers of Dorothy, Melba, Agrícola, Rosabelle, New Marquis, Mrs. Damerum and Elsie Herbert being magnificent; 2nd, Mr. E. DANIELS, Greenford Green.

In the smaller amateurs' classes, Mr. C. R. JAGGS, Hertford Heath, won the challenge cup in the class for 12 bunches, distinct; Mr. E. WILLIS, Swindon, the Walter Voss Cup for 6 bunches, distinct; Mr. W. T. JAMES, Bedford, excelled in the classes for (a) 6 bunches, distinct, of new varieties, and (b) 3 bunches, distinct; Mr. McKERNEL was placed 1st in the class for 3 bunches; Mr. ALLEN, Formby, for 2 bunches; and Mr. J. B. ROBINSON, Great Bedford, Sandy, for a vase of mixed varieties.

DECORATIVE CLASSES.

The decorated tables were very dainty and much prettier than when large, oblong tables were employed. They were round tables, 3 feet in diameter. The 1st prize was awarded to Mrs. ROBINSON, Carshalton, who employed a mixture of about three sorts, apparently E. Cowdy, Melba and Duchess of Portland, with suitable greenery. Mrs. A. G. GENTLE, Little Gaddesden, Berkshire, showed the best épergne of Sweet Peas, arranging Dobbie's Cream with feathery grasses, Asparagus plumosus and light fronds of Adiantum Fern. The 1st prize for a vase of Sweet Peas was won by Mrs. M. HOLLOWAY, Shrewsbury.

NON-COMPETITIVE EXHIBITS.

The following awards were made for collections:—

Large Gold Medals to Messrs. DOBBIE AND CO., Edinburgh, and Mr. R. BOLTON, Carnforth. *Gold Medals* to Messrs. E. W. KING AND CO., Coggeshall, Messrs. ALEX. DICKSON AND SONS, LTD., Belfast, and Messrs. S. BIDE AND SONS, Farnham. *Large Silver-gilt Medals* to Messrs. JARMAN AND CO., Chard, and J. STEVENSON,

Wimborne. *Silver Medals* to Messrs. ROBERT SYDENHAM, LTD., Birmingham, Mr. J. BOX, Haywards Heath, and H. J. DAMERUM, Hayling Island.

SOUTHAMPTON ROYAL HORTICULTURAL.

JUNE 30.—The annual Rose show of the Southampton Royal Horticultural Society was held on this date in the grounds of South Stoneham House, the residence of Ellen Lady Swaythling. Exhibits were numerous and the show proved successful. Ten classes were open to all competitors, the most important one being for 48 varieties, distinct, in which four competed. Messrs. D. PRIOR AND SON, Colchester, won the 1st prize, and the following is a selection of the varieties shown by this firm: Mme. Mélanie Soupert, Lady Ashtown, Mme. Jules Gravereaux, E. Mawley, Mildred Grant, Bessie Brown, Mrs. Welch, Dean Hole, Mrs. A. Carnegie, Snow Queen, Mrs. Dudley Cross, Mrs. Foley Hobbs, White M. Cochet, Avoca and Joseph Hill; 2nd, Mr. G. PRINCE, Longworth, Berkshire, with smaller blooms; 3rd, Mr. H. RICHARDS, Hook Park Nurseries, Warsash.

For 12 varieties, shown in trebles, Mr. G. PRINCE was placed 1st, the varieties Mme. T. Roosevelt, Edgar Burnett, J. B. Clark, Mrs. Foley Hobbs, Mildred Grant and Mme. Jules Gravereaux being conspicuous; 2nd, Messrs. JARMAN AND CO., Chard.

Mr. PRINCE won the 1st prize in the class for 12 Tea or Noisette varieties among four entrants with good blooms of Maréchal Niel, Nita Weldon, Mme. C. Gravereaux, Mrs. Campbell Hall, Mrs. E. Mawley and Mrs. F. Hobbs; 2nd, Messrs. D. PRIOR AND SONS. For 6 blooms of a red or pink variety Mr. ELISHA HICKS secured the leading award with the variety Mrs. G. Norwood; Messrs. D. PRIOR AND SONS, who showed Mildred Grant, followed. The new H. P. Candeur Lyonnaise won for Mr. HICKS the premier place for 6 blooms of a white or yellow variety. This pure white variety resembles Mr. A. Carnegie in shape and is a fine Rose in every respect; 2nd, Mr. T. C. W. DIXON, Southampton, with Mildred Grant.

Exhibits of garden Roses were not numerous. For 12 vases distinct (not more than 4 climbing varieties), Mr. HICKS was placed 1st, the new single Princess Mary, Mrs. H. Stevens, Irish Fireflame, Rayon d'Or, Mrs. E. Alford and Joseph Liger were all excellent; 2nd, H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood).

Mr. HICKS excelled in the class for 3 baskets of Roses with delightful blooms of Lady Hillington, Lady Pirrie and Mrs. E. Alford; 2nd, Mr. G. PRINCE.

Mrs. C. J. FLIGHT, South Down House, Shawford, won the 1st prize for a decorated dinner table with a cheery arrangement of François Juranville; Mrs. E. LADHAMS, Shirley, was placed 2nd for a table decorated with blooms of Mme. Ravary. Mrs. FLIGHT had the best vase of Roses, employing the variety Rosette de la Legion d'Honneur.

Amateurs showed well and numerous. For 18 blooms, distinct, Dr. SEATON, Woodside Cottage, Lymington, secured the Challenge Cup offered in this class for fine blooms of such varieties as Florence Pemberton, Snow Queen, Mrs. A. R. Welch and Dean Hole; 2nd, Mr. C. J. FLIGHT. Dr. SEATON also won in the classes for (a) 6 triplets, (b) 12 Tea or Noisette and (c) for 12 blooms, distinct. Mr. MYERS won the premier award in the class for 6 garden varieties (not more than two climbers) with a good exhibit. In a similar class to fill a space 4 feet by 3 feet, Mrs. H. E. MOLYNEUX, Brantwood, Southampton, won easily with a charming display; Tausendschön, François Juranville and Goldfinch were delightfully displayed; 2nd, Mr. MYERS. In the classes for growers of few plants, Mr. ALLAN SEARLE, Ashburton Lodge, Bassett, won several 1st prizes with excellent blooms, and others who were successful were:—Mr. A. F. TOFIELD, Holmesdale, Chandlersford; Mr. I. HOBBS, Lynton, Winchester Road, Shirley, and Mr. N. DESBOROUGH.

The premier bloom in the open classes was a specimen of Candeur Lyonnaise, shown by Mr.

E. HICKS. In the amateur section Dr. SEATON showed the best bloom in Florence Pemberton.

Sweet Peas were a feature of the show. Messrs. Toogood and Sons, Southampton, offered prizes for 6 bunches. Sir RANDOLF BAKER, Bart, Ranston, Blandford, won the 1st prize with splendid blooms.

GLOUCESTERSHIRE ROSE AND SWEET PEA.

JULY 6.—In spite of the recent heavy rains, which have wrought havoc to the flower gardens and fruit trees in this district, there was a beautiful display of Roses and Sweet Peas at the Annual Exhibition of the above society, held on the Spa Cricket Field, Gloucester. From the point of view of entries the show was the most successful held for some years past, in fact a record was established in the entries for Sweet Peas, which numbered 198, against 105 last year. The entries in the Rose section numbered 120, against 106 at the previous show. The nurserymen's classes were well represented. The nurserymen's exhibits of decorative Roses, staged for effect, were particularly fine, the 1st prize being awarded to Messrs. JOHN JEFFERIES AND SON, Cirencester, JOHN MATTOCK being placed 2nd. Messrs. D. PRIOR AND SON carried off the premier award for 48 varieties, with Mr. JOHN MATTOCK 2nd, and KING'S ACRE NURSERIES 3rd.

Lady Holford's Silver Challenge Cup offered in the open amateur class for 24 varieties was won by Mr. W. JARRATT THORPE, of Hucclecote, Gloucester, who also won outright the Silver Challenge Cup offered by Mr. CONWAY JONES (Hucclecote) for 12 varieties in the Gloucestershire amateur class. Messrs. John Jefferies and Son's Silver Challenge Cup in the Gloucestershire amateur section, for Teas or Noisettes, was won outright by Mr. G. R. BONNOR, of Hucclecote. The President's (Mr. G. D. Timmis) Cup, for the county and city sections, went to Mr. CONWAY JONES. The Silver Challenge Cup presented by the Mayor and members of the Corporation, for Gloucester city amateurs, was awarded to Mr. B. W. PRICE.

The National Society's Silver Medals for best blooms in the show were awarded to Mr. W. J. THORPE, for Mabel Drew; Mr. J. G. ORPIN, Gloucester, for George Dickson; and Mr. J. H. JONES, Tewkesbury, for Dean Hole.

The Sweet Peas were the largest and finest collection ever seen at a Gloucester show. Mr. W. H. HOLLOWAY, of Shrewsbury, won the Silver Challenge Cup for 24 distinct varieties, and the National Sweet Pea Society's Medal for the best vase of Sweet Peas in the show with Hercules. Sir RANDOLF BAKER, Bart., M.P., was placed 2nd. Other Silver Cup winners were Mr. E. HARWOOD, Farmhill Park Gardens, Stroud, and Mr. C. E. REMES, Stonehouse.

SALTAIRE ROSE.

JULY 7.—The 13th Annual Show of the Saltaire Rose Society was held on this date in the Saltaire Park. The whole of the proceeds of the show were devoted to the War Relief Funds, and an auction sale of the flowers was conducted, when Messrs. FRANK CANT's exhibit of 50 blooms realised the sum of £25; other exhibits realising the sums of £5, £3, and £1.

In the class for cut Roses, 7 distinct varieties, and for 12 new Roses, Messrs. D. PRIOR AND SON, Colchester, were placed 1st; 2nd, Messrs. CHAPLIN BROS., Waltham Cross. For 16 varieties and for 24 varieties Messrs. F. CANT AND CO., Colchester, were placed 1st; 2nd, Messrs. D. PRIOR AND SON. Messrs. CHAPLIN BROS., Waltham Cross, won the Silver Rose Bowl and the society's Silver Medal for 5 baskets of Roses in 5 varieties: 2nd, Messrs. W. AND J. BROWN, Peterborough. Messrs. D. PRIOR AND SON were placed 1st in the class for one basket of any one light Rose, exhibition variety, the 2nd place being taken by Messrs. R. HARKNESS AND CO. In a similar class for a dark Rose, Ist. Messrs. CHAPLIN BROS.; 2nd, Messrs. W. AND J. BROWN.

In the class open to all amateurs, W. SUNDENLAND, Driffild, won the Silver Rose Bowl for 18 cut blooms of distinct varieties, and was placed 1st for 12 cut Roses.

In the Sweet Pea classes the best exhibit of 18 bunches, distinct varieties, was shown by Lord NORTH, Banbury, who also excelled in the class for 12 bunches, distinct.

PENARTH ROSE.

JULY 7.—The seventh annual show of the Penarth Rose Society was held at the Windsor Gardens, Penarth, on this date. No prizes were awarded this year, the proceeds of the show being divided among the Red Cross Society, Order of St. John of Jerusalem Hospital, and the Ladies' Work Societies, Penarth. The exhibition was a small one, but there were some attractive features. Mr. REGINALD CORY, Duffryn, sent a very fine exhibit of Rambler Roses, which were arranged at the entrance of the marquee. Mrs. JENNER, Wenvoe Castle, staged a collection of Sweet Peas. A miscellaneous group was shown by Mr. THOMAS MOREL, and Gloxinias and Begonias were the outstanding features of a group staged by Mr. J. W. PENYMAN, J.P.

In the competitive classes Mr. H. HAND was the most successful exhibitor, being placed 1st four times and 2nd twice.

Obituary.

JAMES H. MCKAY.—The death of Mr. James H. McKay, florist, of Philadelphia, is announced in the American Press. Mr. McKay was a native of Scotland; he settled in America over 30 years ago, and was 51 years of age. His death was due to drowning at Atlantic City on the 20th ult., when seven other bathers lost their lives.

LAW NOTE.

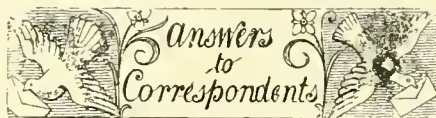
GARDENER A MALE SERVANT.

At the Reading Court recently a defendant was prosecuted by the Inland Revenue authorities for keeping a male servant (a gardener) without a licence. Mr. C. G. Chambers represented the Inland Revenue authorities, and Mr. R. Rowland Kent defended. David Hatt, of Mortimer, said that for two years he was employed by Mr. Bateman at a wage of 18s. per week and cottage. (He had since been dismissed.) His duties were to look after the garden; although Mr. Bateman kept a cow he did not have to milk or look after it, and he had only done occasional jobs of painting and wood-chopping. He was permanently engaged, and did no other work for any other person. In cross-examination Hatt denied that a great part of his time was occupied at wood-cutting, and that a jobbing gardener named Vass was engaged to do the gardening at any time while he was employed there. P.S. Taylor, of Mortimer, said that he had seen Hatt employed in gardening, but never engaged in other work, and P.C. Jeffcott, also of Mortimer, said he had seen Hatt mainly employed in the garden. Mr. Bateman said that he employed Hatt as a general labourer, not as a gardener, and that the real gardener was Mr. Vass, and any work Hatt did in the garden was under supervision. Hatt was a painter by trade, and he had no proper knowledge of gardening, and was engaged out of charity, being without work at the time.

The Bench ruled that Hatt was a gardener, and imposed a fine of 10s., granting 4s. 6d. costs to Hatt, who was a subpoenaed witness, and ordered the defendant to take out a licence.

Mr. Kent said that the defendant had not broken the law intentionally. He was under a misapprehension.

The Bench said they had taken this into account, and that they had powers to impose a fine of £20.



BALSAMS AND ASTERS DYING: *Rec. S. H. S.* The Balsams are destroyed at the roots by eelworms and the Aster is injured by the fungus *Thielavia basicola*. In both cases the soil in which the plants have been grown should be sterilised.

BOOKS: *J. D. A. E.* Your volumes of *The Florist* are very incomplete. A complete set dates from 1848 to 1884. The other works you mention are not valuable. The approximate worth of *Hortus Britannicus*, 1830, is 2s. or 3s. The edition of 1836 of *Loudon's Encyclopaedia of Plants* is priced in a bookseller's catalogue at 7s. 6d., and that published in 1829 at 5s. We cannot find any reference to the price of *Green's Herbal*, but *Scott's Orchardist* is priced at 3s.

FIGS NOT RIPENING SATISFACTORILY: *Perplexed.* It is more likely that a check has been suffered than that a disease is present. Ventilate the house freely, and warm the atmosphere by means of the water pipes. Less moisture at the roots is advisable. The seeds of the fruit do not appear to be fully developed. Stop the leading growths of the trees, if this has not been done already.

MELON PLANTS DYING: *J. W. B.* The plants are injured by Melon leaf spot, *Cercospora melonis*. Every diseased leaf should be burnt so soon as the malady is detected, treating the whole plant in the same manner if the attack is severe. Spray the plants at intervals of four days with a solution of liver of sulphur, 1 ounce in six gallons of water.

NAMES OF PLANTS: *John Mann.* *Phillyrea media* var. *oleaeifolia*. The plant may be propagated by layering or by cuttings inserted in September.—*G. C. R. 1.* Too withered to identify; 2, *Syringa Emodi*; 3, *Gaultheria Shallon*; 4, *Genista hispanica*; 5, *Symphoricarpos racemosus*; 6, *Ulmus viminalis* var. *variegata*; 7, *Acer platanoides* var. *cucullatum*; 8, *Broussonetia papyrifera*; 9, *Liriodendron tulipifera*; 10, *Ribes sanguineum*; 11, *Populus balsamifera*; 12, *Berberis vulgaris* var.—*W. S. L.* *Gilia micrantha*, a Californian annual.—*S. G. W.* *Phallus impudicus*, Stinkhorn.—*R. G. H.* 1, *Pyrethrum parthenium* fl. pl.; 2, *Nepeta Mussinii*; 3, *Colonia coccinea*; 4, *Muscari comosum*; 5, *Echornia (Pontederia) crassipes*; 6, *Polygonum* species; 7, *Ophiopogon Jaburan* variegata; 8, *Selaginella Wildenowii*.—*T. R.* We do not recognise the variety of *Rose*.—*J. R.* *Anxious.* *Euphorbia splendens*; not a Cactus, but a member of the *Euphorbiaceae*.—*F. B. K.* *Ceanothus azureus*.—*H. G. S.* *Ecremocarpus scaber*.

PEACHES AND NECTARINES DROPPING: *M. J.* The dropping of the fruit, when small, is probably due to imperfect pollination. It is also possible that too many of the fruits have been left to stone, and this would cause them to drop when about the size of Walnuts. Absence of lime in the soil would aggravate the trouble.

PELARGONIUM: *H. S.* *Pelargonium* cuttings should be struck in the pots in which they are to remain throughout the winter. If lifted from the open ground when potting in autumn the check would be too great.

PRIMULAS: *Dorset Gardener.* *P. sikkimensis* and *P. secundiflora* are best raised annually from seed for flowering in the following year. As a rule the plants die after flowering, and even if they survive the winter, old plants are never so strong as young ones. *P. involucrata* is a better perennial, and usually grows well in a moist, shady place. *P. vittata* or *P. Wilsonii*, as it should be called, is also of a biennial character.

PROPAGATION OF PHLOX SETACEA AND OTHER PLANTS: *X. Y. Z.* The present is a suitable time to propagate, by cuttings, most of the plants you name. In the case of *Phlox setacea* and *Lithospermum prostratum*, cuttings of soft wood with small heels may be selected, but the heel is not essential. Insert the shoots in sandy soil and keep them moist in a close frame until they are rooted. *Androsace lanuginosa* is more easy to propagate. The rosettes produced at the end of the stolons may be pegged down firmly where they are growing, when they will soon make roots and be ready for potting early in the autumn. Instead of a frame bell-glasses may be used, but the glass must be kept shaded.

ROSE SPORT: *J. B.* The variety may be a sport of Lady Barham, but it possesses no special merit, being devoid of good form and distinctive colouring.

ROSE TREES UNHEALTHY: *T.* The leaves are injured by the black spot fungus, which is very common, but beyond disfiguring the foliage it does not appear to cause much harm to the plants. Spray the plants at intervals with liver of sulphur.

SOUVENIR DE LA MALMAISON CARNATIONS: *W. S.* It is not necessary to stop "Malmaison" Carnations. For this season's layers use 5-inch pots, and let them remain in this size for the winter. The plants will throw one flower each next May, and make natural breaks varying from six to eight shoots. Next June pot them into 8-inch pots and cultivate in a cool house.

SWEET PEA BUDS DROPPING: *J. M.* The trouble may be due to one of several causes, but most generally it is caused by a check at the roots. Feeding the roots before the plants come into bloom, thus causing very rapid and soft growth, usually results in bud dropping. The roots getting into a layer of rich manure, especially during a wet period, has the same effect. Another cause is rapid changes in the temperature. Plants growing in a semi-shady position will often drop their buds more or less the whole season. During the past two or three weeks there has been much trouble with bud dropping all over the country, this being distinctly traceable to the very cold nights at the end of the third week in June; some varieties are more susceptible to the complaint than others. If the ground in which the Peas are planted was trenched, and at the time of trenching manure incorporated thoroughly with the soil (instead of being placed in layers, as it often is), and no feeding and watering indulged in until the first two or three sets of flowers open, then there would not be the same predisposition to bud dropping. When a narrow trench is filled with rich manure and soil, and the plants placed in or on this, bud dropping is bound to result, as during wet weather practically all the moisture drains into the trench and the roots get into a sickly condition.

TOMATO LEAVES AND CARROTS DISEASED: *J. R. Anxious.* The Tomatos are affected with disease; spray the plants with a fungicide, such as the Bordeaux mixture or liver of sulphur. The Carrots were too withered to determine the trouble. From their appearance we suspect the Carrot fly is responsible. We do not recognise the manures.

TOMATO PLANTS DISEASED: *T. N.* Mosaic disease is present, which is of a physiological nature, no fungus or insect being concerned. Before planting Tomatos again dress the soil with equal quantities of soot and lime.

Communications Received.—*H. G. S.* (Llandudno) *Polo*—*G. H. E. A. B. W. G. I. J. J. & Son*—*C. N.*—*Cheshunt*—*Shrub*—*J. H. R. H. S. W. S. L. G. B. J. W. B. N. Y. Z. K. J. M. J. A. F. Sir H. M. D. G. P. A. J. B. A. W. S. F. P. J. H. J. E. C. T. H. W. P. A. W. E. T. S. H. T. F. B. H. B. W. C. W. W. A. A. B. J. M. J. W. G. F. M. T. A. G. E. M. H. P. B. Miss W. T. M. W. R. A. M. E. S. T. S. L. F. B. W. H. W. E. A. E. P. W. L. Berk. H. C. (Spiraeas next week).*

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THE CHAIN OF SAINTE-BAUME.

THIS remarkably picturesque range of carboniferous limestone, lying east and west at the back of Toulon and Marseilles, has already been referred to in these columns (*Gard. Chron.*, July and August, 1912) by Mr. Tansley in his paper on "The Forests of Provence." The famous Forest of Sainte-Baume is without doubt one of the most interesting forests of mixed timber trees in Europe. It is, however, the flowering plants in general which I desire to draw attention to in this article, for rarely have I made a botanical excursion into so interesting a country, and perhaps never with such varied results and pleasant surprises. It was on June 5, 1913, that I left the still enchanting littoral of the Var and took the diligence from the market town of Aubagne, just east of Marseilles, to the village of Gémenos, at the foot of the mountains. On this alluvial plain, so near the sea, the blue spikes of *Salvia pratensis* and of a Comfrey, probably *Symphytum mediterraneum**, were noticeable from the carriage, as were yellow masses of *Isatis tinctoria*, near the saw-mill above Gémenos. From the mill a shady path through a remarkable grove of Judas-tree (*Cercis Siliuastrium*) and Holm Oak (*Q. Ilex*) rejoins the road at a massive bridge over the stream.

At first Aleppo Pines are dominant, but the Pine woods gradually pass into garigue, the Provençal name for the shrub association of the limestone hillsides. Mixed with the Pines the following Mediterranean plants are much in evidence—namely, *Rhus Cotinus*, with its compound panicles of feathery fruits, and its close ally *Pistacia Terebinthus*, *Ulex parviflorus*, *Spartium junceum*, *Coronilla juncea*, *Quercus coccifera*, *Cistus albidus*, *Rosa sempervirens*, *Teucrium Polium*, *Asphyllanthes monspeliensis*, with its leaves reduced to scaly sheaths at the foot of the stem, and occasional plants of *Anarrhinum bellidifolium*, with its long, delicate spikes of pale blue flowers. But the most beautiful object was the porcelain-blue *Linum narbonense*, whose petals are shortly apiculate and the blossoms an inch in diameter. In other places the colour of this Flax is usually deeper.

At about 1,200 feet the road suddenly opens upon a magnificent panorama (fig. 16). A

deep valley, covered with shrubs and occasional Pines, is backed by steep cliffs on the east, while above the Col de Bertagne, on the horizon which we are making for, rises a bare limestone peak of considerable boldness. On the steep hillside, above and below the well-engineered road, some interesting plants arrest the attention. *Colutea arborescens*, with its great inflated capsules,

on these sun-baked slopes. Here also was a large clump of *Reseda lutea* with remarkably small flowers and fruits in particularly narrow spikes.

Leaving the road, and after a hot and tiring scramble through tall, entangled masses of maquis, I found myself, at about 2,000 feet, within the precincts of a charcoal-burner or



[Photograph by H. S. Thompson.]

FIG. 16.—VIEW OF THE COL DE BERTAGNE.

sometimes planted on railway banks and in London gardens; the shrubby *Bupleurum fruticosum*, the brilliant great Pea (*Lathyrus latifolius*) of our cottage gardens, together with *Saponaria ocymoides*, *Astragalus monspeliensis* and *Coris monspeliensis*, which, like the Tree-heath, remains so long in the bud stage. The well-known feather grass (*Stipa pennata*), so

charbonnier, who, with his wife, had pitched his tent in the shadow of a fine Aleppo Pine overlooking the wooded valley (fig. 17). It appears that Holm Oak and *Q. pubescens* are chiefly used for charcoal, and that five kilos of Oak make about one kilo of charcoal after slowly burning eight to ten days in an Oak fire. This hospitable couple get ten francs for five kilos



[Photograph by H. S. Thompson.]

FIG. 17.—CHARCOAL-BURNERS 2,000 FEET UP THE COL DE BERTAGNE.

often seen in the hats of Austrian guides and also in those of smart ladies in London, comes down to this level; for, of course, it is by no means confined to the Alps; but it is interesting to see it disputing the arid ground with Rosemary, the curious *Leuzca conferta*, *Cephalanthera rubra*, *Quercus pubescens*, *Anthyllis Vulneraria*, both white and red, *Pyrethrum corymbosum*, the handsome *Antirrhinum latifolium* and *Dorycnium suffruticosum*

of charcoal on the spot, or fifteen francs delivered in the village of Gémenos.

Passing through a somewhat level stretch of broken ground, the vegetation comprises such things as *Convolvulus lanuginosus*, *Silene macropetala*, the handsome blue *Vicia onobrychioides*, *Helianthemum vulgare* in variety, *H. polifolium*, *Cistus albidus* var. *alba*, *Rumex intermedius*, *Orobanche rubra*, *O. cruenta*, *Genista argentea*, *G. hispanica*, *Jasminum*,

* This is recorded from Aubagne by Mr. Bucknall in his recent excellent monograph of *Symphytum*.

Thapsia villosa, *Bartsia latifolia*, *Allium roseum*, *Potentilla hirta*, L., *Limodorum abortivum*, *Juniperus Oxycedrus*, whose young leaves are bright green, and *Erysimum longifolium* var. *squarrosum*. Then the narrow path skirts along a steepish scree, and small trees of *Acer monspessulanum* appear, together with the blue *Catananche coerulea*, *Epipactis atrorubens* and *Genista Lobelii*, which forms thick-set prickly mats so strong as to almost bear the weight of a man. Another characteristic plant is *Teucrium aureum* (*T. Polium* sub. sp. *luteum* Briquet). It is less than a foot high, but ligneous at the base, and covered with soft down, bright yellow at the summit. The leaves are white felted on both sides, and the flowers are in a globular head of a golden colour. Several uncommon and very minute species can be seen on these limestone screes, such as *Galium verticillatum*, *Arenaria capitata*, *Alsine rostrata*, *Orlaya platycarpus*, only 3 inches high, and *Clypeola Jonthaspi* var. *lapidicola*. Before reaching the Col I noticed *Antbericum Liliago*, *Veronica Teucrium*, *Linum salsoloides* (flowers white, with violet base outside), and a stunted *Pinus sylvestris*, which tree here meets the Aleppo *Pinus* of the coast.

The Col de Bertagne is just under 3,000 feet above the sea; and on a grassy plateau was a variety of *Veronica Teucrium* with pale pink flowers and rose-coloured stamens. Though colour-forms of *Veronica* are not uncommon, this form of *V. Teucrium* I had not heard of before. A deep blue, shrubby *Gromwell* now caught my eye, and I vainly hoped that *Lithospermum prostratum* of Western France had got established in a new district; but the *Gromwell* of these high ridges of Ste. Baume is *L. fruticosum*, a very similar under-shrub. The Col is, for the most part, a stony limestone plateau, leading gently down towards the village of Plan d'Aups, where are several small hotels a few miles nearer than the famous *Hôtelerie* at the further end of the plain. The vegetation of the Pass is very interesting, and especially noteworthy for small, prickly under-shrubs and greyish plants, simulating the broken limestone upon which they grow. *Santolina incana*, *Teucrium luteum*, and *Achillea tomentosa* are three of the most abundant; and there are glaucous plants like *Laserpitium Siler*, *Serratula nudicaulis*, *Linum salsoloides*, and *Aphyllanthes*. On some of the larger rocks to the north are the southern *Globularia nana*,† *Amelanchier* and *Silene Saxifraga*; while *Daphne alpina*, *Saxifraga hypnoides*, and *Helleborus foetidus* are seen in shady places. A bank not far from Plan d'Aups is covered with *Lathyrus canescens*, an uncommon Pea, with beautiful pale purple-blue flowers. *H. S. Thompson*.

(To be concluded.)

BRACKENHURST, PEMBURY.

Ever since Mr. J. Gurney Fowler purchased the fine property situated on high ground above Tunbridge Wells he has carried out developments which have greatly improved the gardens.

The garden that surrounds the pretty rural dwelling was formerly of no special design, and beyond were grass and woodlands in which some very fine Oaks covered an undergrowth of stubbed Spanish Chestnut. The Oaks have been carefully trimmed, and the underwood removed except where it was required to form screens or to separate the various gardens.

In the green glades and in the underwood the Bluebells, Wood Anemones and Primroses have this spring carpeted the ground with flowers. In the shrubberies and beds the same natural plan is carried out, and thousands of Daffodils, Lilies, Gladioli and other bulbous plants have been planted beneath the shrubs, which have the main duty of furnish-

† Quite distinct from *C. cordifolia*, and not found in the Alps of central Europe.

ing the display. In front of the house on one side is a sunk lawn with dwarf wall and rock plants around, beyond which is a fine hedge of Dorothy Perkins Rose. On the other side is a fine Rose garden, the beds having grassy paths and the backing of beautiful herbaceous plants beyond harmonising well in the general view.

Beyond is an ornamental water and Iris garden, rich in flowers of varied tints, a moist nook having a collection of Iris Kaempferi.

For some time past the great attraction has been in the Rhododendron garden, in which large oblong and elliptic beds are planted each with one kind of Rhododendron chosen for its effective colouring. These are in great beauty, and between the bushes appear the stout stems of the stronger-growing Lilies, whilst below them again the blooms of Narcissus and Tulips were effective, and, like a pale blue cloud over the surface of the beds, the densely set flowers of the Forget-Me-Nots.

The high ground behind the Rhododendron garden has a fine show of The Bride, a good white Rhododendron, and each of the beds forms a mass of bright colour, which, being in large batches of one tint, make a fine effect both when viewed near and from a distance. The most beautiful bed was that of Pink Pearl, in which standards rose above the bushes in the bed, and all were furnished with large heads of flowers, varying in tint from blush-white to rose, according to the age of the flower, the naturally produced variation of colour being charming. A winding walk of natural rock stone passes between banks of bright colour furnished by the warm-tinted Azalea mollis and others of that class, with white and yellow Genistas at the back and the ever-present flowering bulbs in the spaces, the margins being of dwarf Heaths, Gaultheria, and other suitable shrubs of low growth.

The plan carried out is to make informal set designs of one class of plants, working in others of similar habit of growth to prolong the flowering season and heighten the effect, while at all points in the original woodland glades nature still remains, but aided by the planting of suitable plants with the Lily-of-the-Valley, Blue Bells and Wood Anemones, which have had their home there for many years. A lobe beside one of the walks has a very complete collection of Japanese Maples, varying from the massive palmate leaf to the finely-cut varieties, and in colour from pale green to deep red. These Maples are continued along the walk until they merge into an opening planted with Arbutus, Andromedas, Kalmias and similar plants, between which the stout stems of Liliun auratum, L. candidum, L. Brownii, and others appear in profusion. Grassy walks are the rule, and they harmonise with every class of planting and combine the whole. Following the path we pass a bank of Kniphofias, a clump of Hellebores, with Foxgloves and Ferns appearing above them. On the side of the walk and fronting the plantations of flowering shrubs are many pillars of Roses, with arches here and there, and the earliest of them already bearing masses of bloom. A moist dell has been planted with Ferns and terrestrial Orchids, and generally the sylvan nature of the woodland is being preserved, fragrant plants being used extensively. Thus we have a long walk in which all the species of Honeysuckle form the chief feature, and the Nut Walk has patches of pretty and fragrant flowers.

It is intended to form a Japanese garden in a retired part of the grounds, and some other improvements are planned. Herbaceous and Alpine plants fronting shrubberies give a fine and varied show. Along the broad walk the silver of the foliage of Gnaphaliums, Cinerarias and other plants shows up the rich tints of the Aubrietias, Campanulas and Violas. A specimen Abutilon vitifolium in a nook against

the house is covered with its large sky-blue flowers.

Two beds of Liliun giganteum have some with flower-spikes, although the greater number will not flower until next year; a planting of Paul's Scarlet Thorn and clumps of various flowering shrubs are well arranged to give effect without encroaching on the rarer plants beneath, and a number of very fine Conifers, some of which were only recently planted, will increase in beauty every year. *J. B.*

THE BULB GARDEN.

BOWIEA VOLUBILIS.

I HAVE no recollection of having seen a record of this South African Liliaceous plant, the only one of its genus, having been grown successfully outdoors. It may be interesting, therefore, if I state that I had it last year climbing over a Lilac bush, at the base of which it was planted in 1913 as an experiment, the success of which, seeing the soft nature of its globose, tuber-like root-stock, was not very promising. But it produced its long, trailing shoots profusely and flowered last summer, and is growing well and will probably flower this season.

In structure the plant has many interesting points. The globose "bulb" produces few and insignificant linear leaves which soon decay. At a later stage ascend the long, trailing branched growths which at maturity produce star-like greenish flowers of two classes, the mature or perfect blooms having expanded and reflexed segments, and the immature closed and rudimentary buds.

Mr. J. Medley Wood, in *Natal Plants*, Vol. 4, Part I., says of it: "The juice of the bulb has irritant properties, but is not vesicant; the natives use it for rubbing on the skin in cases of sickness, and they also take a portion of the bulb, boil it, and then strain off the water, and use as a lotion for sore eyes; and in the early days when an 'impi' or 'commando' was going out to war, the native doctors used to sprinkle the warriors with a decoction of the bulb, which was said to have the effect of making their enemies flee before them." *James O'Brien*.

VEGETABLES.

A GOOD CUCUMBER.

ALL the essential qualities of a high-class and prolific Cucumber are found in the variety Every Day Cucumber raised in the Royal Gardens, Windsor. It is perfect in shape, has very little neck, and is almost seedless, whilst it is deep green in colour, smooth and possesses superior flavour. From a plant grown in a pot I have cut a remarkably fine specimen with bloom on, 22 inches in length, 9 inches in circumference and weighing 3½ lbs. I consider this a profitable Cucumber, either for private gardens or to grow on a large scale for the market. *G., Stretton Hall Gardens, Stafford.*

EARLY PEAS ON LIGHT SOILS.

The crops of early Peas matured very early this season, and amongst the most successful varieties were May Queen, Eight Weeks, and Pioneer. The last named is a splendid cropper and grows about 2 feet 6 inches high; although the Peas are of very good flavour. May Queen is superior in this respect. Gradus still does well here, and pods from this variety were ready for gathering on June 27. Other good early varieties are Giant Lightning and May Flower. International holds its own, both for cropping and quality. Of later varieties Harvestmen, Autocrat and Peerless are giving good yields. In our light, porous soil, mulching is of great benefit, for the extra moisture the roots obtain thereby not only increases the crop but causes the Peas to be larger and of better quality. *W. A. Cook, Ockford Gardens, Godalming.*

The Week's Work.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

CLEMATIS.—The roots of Clematis must not be neglected for water; even if the rainfall be an average one, it is practically impossible for rain to reach the roots in sufficient quantities when the plants are growing against walls or in similar positions. The growths require constant attention to prevent entanglement, and should be trained to get the best results when in bloom. *C. montana* is particularly happy rambling over decayed trees or thinly furnished trees such as old Scotch Firs. When growing in manageable positions, the wood on which flowers were recently produced may be cut out to encourage other shoots to develop for next year's blooming.

SWEET PEAS.—The rains have benefited Sweet Peas, but they were not sufficient to relieve us of watering. So far, all the Sweet Peas I have seen are healthy and free from streak disease. Make efforts to maintain these conditions by regularly hoeing the soil around the plants at least twice a week, and keep all faded blooms cut off regularly unless seed is required. As a stimulant, apply a weak dose of superphosphate, either in solution or scattered dry and hoed in before watering.

ROSES.—Shorten slightly the shoots of Tea and Hybrid Tea Roses after they have flowered to encourage growth for a second crop of bloom. Feeding with an approved fertiliser and watering with liquid farmyard manure will do much to assist growth. Mildew has made an appearance, making it necessary to dust the foliage with flowers of sulphur. Aphis was very bad through June, the dry weather and frequent cold winds being favourable to the pest, and spraying may have to be continued.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

Budding.—Propagation by budding is recommended for stone fruits, such as Peaches, Apricots, Nectarines, Cherries, and Plums, for in their cases budding gives better results than grafting. Plum stocks are most commonly raised from seed, but occasionally by layers, suckers, and cuttings. The Cherry succeeds best by budding, as the tree is more apt to gum when grafted. Both Plums and Cherries grow best upon stocks of their own kind. Apples and Pears grow freely from grafts, which is the easier and more expeditious method, but most kinds of fruit trees that may be propagated by grafting also succeed by budding. To sum up, budding is resorted to as a rule for increasing all large stone fruits, and grafting for the smaller seeded fruits, such as Apples and Pears. If the bark will lift freely, the present is the most suitable time for budding operations. The head of the stock should not be cut off as in grafting, but left until the following spring, and then removed. Choose a smooth part of the stock at a suitable height—preferably on the north side away from the sun—for inserting the bud. Make a horizontal cut through the bark of the stock, and from the middle of that a cut downwards about 2 inches in length, so that the two form the letter T, being careful not to cut too deeply, lest the stock should be injured. Having removed the leaf from the bud, leaving the foot-stalk as a handle, prepare the bud for insertion. When cut off the scion with bark at either end forms a shield, hence the term shield-budding. Insert the bud in the usual way and secure it by raffia or other material. Three weeks or a month after the buds have been inserted examine them, and those which have turned black may be considered dead. The ligatures of the others should then be loosened, for if this is not done the tie may injure the stock, and perhaps

strangle the bud. In the following March, cut off the stock about 3 or 4 inches above the bud in a sloping direction, so that moisture may pass freely off the cut surface. The young shoots should be made secure to the part of the stock left above the bud, but when it is strong enough to resist danger from winds the old stem may be cut off close above the bud. Shoots frequently arise from the stock below the bud; these should be rubbed off as soon as they appear, that all the strength of the stock may be directed towards the bud-shoot. In the autumn or spring following, the young trees may be transplanted into the places where they are to remain, or they may be kept longer in the same position, and the young trees trained according to the purpose for which they are designed. In budding, the selection of suitable buds is one of the essential details in success. The third or fourth buds from the base of a growing shoot are the best. As soon as the wood is in a fit condition, the buds can easily be removed by the pressure of the finger and thumb. The wood should always be taken out from the base end of the shoot; if taken from the top end, in almost every case the bud is torn out with it.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME,
Warter Priory, Yorkshire.

EUPHORBIA PULCHERRIMA (POINSETTIA).—The earliest-rooted plants should be potted in a rich, friable compost. Pots 6 inches in diameter are generally considered to be a useful size. After potting, shade the plants lightly for a few days, but later accustom the plants gradually to the sunlight until they are fully exposed. They will grow well in an airy house with a temperature of 60° to 70°; if grown in too much heat and moisture the leaves become soft in texture and are difficult to retain on the plants. In all stages of growth stand the plants close to the roof-glass. Let the watering and feeding of the roots be done with great care, for an excess of moisture or strong doses of liquid manure may cause the roots to die and the foliage to drop, which would prevent the bracts developing properly.

FERNS.—Where Ferns are required in large numbers in pots of various sizes for winter decoration, propagation should continue. *Pteris tremula*, *P. cretica*, and others of the best crested form; *Adiantum cuneatum*, and *A. formosum*, are amongst the most useful kinds. Most Ferns are not particular in the matter of soil; a little peat is helpful, but fronds of plants grown in plenty of loam have more substance and last better when cut. In potting at this season, do not disturb the roots more than is necessary, but remove the old drainage materials from the base, rinely broken crocks, sandstone and charcoal and sand should be mixed with the compost in moderate quantities. After potting, shade the plants lightly for a time, and see that the atmosphere is moist. Admit sufficient air to prevent the fronds from growing weak. If the roots are fed with weak liquid manure and soot water during their season of active growth, pots 5 or 6 inches in diameter are large enough for any purpose, except where specimen plants are required.

FRUITS UNDER GLASS.

By JOHN HIGHTGATE, Gardener to the Marquis of
LINLITHGOW, Hopetoun, South Queensferry, N.E.

PINES.—As the fruits of the Queen variety show signs of turning yellow, ventilate the house or pit more freely, reduce the amount of atmospheric moisture, and use less water at the roots; to secure Pines of the highest flavour the soil should be allowed to become dry by the time the fruits are ripe. Should more Pines be ripening than are required at one time, remove several of the plants to a cooler house, also cut some of the fruits before they are quite ripe and place them on shelves in a cool, airy fruit-room, where they will keep fresh for a considerable time. Successional plants are growing freely, and will respond to a liberal treatment. Let the night temperature be 75°, allowing a rise of 10° during the day with sun-heat. Close the house early in the afternoon, and, at the same time, spray the plants gently overhead, but

do not employ excessive moisture at this time. Suckers inserted last month should be examined frequently, and the more forward ones shifted into larger pots before they become root-bound. For this purpose it is wise to have the soil in readiness.

PEACHES.—Continue to afford permanent trees that have been cleared of the crop generous treatment at the roots. On fine days syringe the foliage morning and afternoon in moderation, unless red spider or aphid is present, as much moisture would cause the growth to be soft and hinder it from ripening thoroughly. See that the roots do not suffer from lack of moisture. Houses in which the fruits are approaching the ripening stage should be ventilated more freely than hitherto, and the syringing of the foliage should be discontinued before the fruits are quite ripe, but it is advisable to damp the border and paths at least twice daily. Later trees carrying heavy crops must receive frequent applications of liquid manure or other stimulant, in addition to a surface dressing of manure. As in the earlier houses, the fruits should be exposed as much as possible to the sun by drawing aside and tying back shoots or leaves that may shade them. Continue to pinch and regulate the shoots, allowing plenty of room between each, so that the wood may be thoroughly matured before autumn. In favoured districts no difficulty is usually experienced in perfectly ripening some of the latest varieties of Peaches, but in colder parts many of these late sorts ripen their fruit indifferently, and the latter are more or less flavourless. The difficulty may be overcome by affording the trees more generous treatment, particularly after the stoning period, closing the house much earlier in the afternoon with plenty of sun-heat and opening the ventilators for a short time in the evening to allow condensed moisture to escape.

THE KITCHEN GARDEN.

By JOHN DENN, Foreman, Royal Gardens, Windsor.

ONIONS.—Spring-sown Onions are greatly benefited by light dressings of artificial manure applied during showery weather. Soot is an excellent stimulant for this crop, but must be applied in moderation either during moist weather or previous to watering with clear, soft water. Hoe lightly the soil between the rows, with a view to keeping weeds in check. Autumn-sown Onions should be lifted as soon as they have reached their full size, dried thoroughly, and afterwards stored in an open shed where the air will circulate freely amongst them. If dried carefully before being placed under cover the bulbs will keep well through the autumn.

COLEWORTS.—This useful green vegetable should be planted at once to furnish heads for use in early winter. Choose rich ground, and allow the plants a space of 15 inches each way. Water the roots thoroughly as soon as the plants are inserted. When the plants are established, stir the ground frequently, and if slugs are troublesome, dust the rows with lime in the early mornings, before they seek cover.

LEeks.—The earliest Leeks are well advanced in growth, and should not be allowed to become stunted for want of stimulants. Water them freely with liquid manure from the farmyard, and do all that is possible to promote a free growth. There are few crops that repay better for liberal cultivation than Leeks.

LETTUCE.—From now onwards to the middle of September make frequent small sowings of Lettuce. Much will depend on the weather which sowing will be the most profitable, but where a constant supply is required, this is the only means to adopt. Sow in rich soil, and, as soon as the plants are large enough, thin them to 9 inches apart. See that the roots have plenty of moisture.

ENDIVE.—Sow Batavian Endive for winter supplies, and make another sowing a fortnight later to furnish plants for use during the spring. Endives should be blanched as soon as they are large enough for the operation by carefully gathering the leaves together with the hand and tying them with some soft material.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C. Editors and Publisher. — Our Correspondents would oblige by sending answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JULY 29—

Chesterfield Floral and Hort. Show.

THURSDAY, JULY 29—

Horticultural Exhibition at Whitton Park, Blackburn (4 days).

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

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, July 22 (10 a.m.): Bar. 29.4. Temp. 64°. Weather—Raining.

The Fruit Crops.

The information relating to the present condition of the hardy fruit crops, which we print this week, is not calculated, on the one hand, to raise unduly the hopes of the consumer, nor yet, on the other hand, to depress the grower. Taking the returns collectively and the different crops as merely items in the general yield, it will be seen that the year 1915 is likely to rank as a good average fruit year. There is always a disadvantage connected with high records of good fortune; they set a standard equalled only on infrequent occasions, and by comparison with more average experiences they have the effect of making these latter appear less satisfactory than is really the case. So with our fruit returns, we naturally compare them with the record figures of last season, when every kind of plant that bears conspicuous fruits, including those cultivated for human consumption, bore crops which amounted almost to the limit of their capacity, though Apples, it will be remembered, were not particularly abundant.

But gardeners who have any considerable experience know only too well that successes in the outdoor garden are not lightly to be reckoned upon; they depend upon many circumstances, some of which are entirely beyond the cultivator's control, including such important factors, for instance, as rainfall, temperature, freedom from storms, and to some extent at least diseases and pests. The experiences of *Southern Grower*, related in detail in our last issue, serve to prove the latter point. He has given the closest study to the ways of the Apple aphides; he has watched them, sprayed them, and written about them more than any other man, and his remarkable care gets acknowledgment in Mr. Theobald's *Insect Pests of Fruit*; yet this patient experimentalist has to complain this season of a visitation of Apple aphids more serious than any preceding raids. The fact appears to be that whilst *Southern Grower's* trees might have remained clean

of aphids if the present season had been an ordinary one, they, nevertheless, were not proof against infestation at a time when this pest was an epidemic in almost every orchard. Our returns show that whilst the aphid trouble has been widespread, it has been most severe in the warmer, southern counties, which include Kent, Surrey, Sussex, Middlesex and others. It may be worth pointing out, for the guidance of those whose orchards are suffering from Apple aphids, that Mr. Theobald declares it to be impossible to destroy the pest by spraying in spring when the damage is being done to the leaves and shoots; so many of the insects are shielded from the spray-fluid by the curling of the leaves that the infestation is continued. But the aphid is more vulnerable in autumn, in September and October, when in the sexual stage. Sprays should be carried out at that period with a fairly strong paraffin emulsion, applied not too vigorously, or there may be danger of the leaves falling. It is scarcely necessary to add the oft-repeated warning that all prunings should be destroyed by burning, and if this be done before the end of March many eggs will thereby be destroyed.

The severe drought of April and May probably favoured the spread of aphids, but whether or not this was the case, it certainly caused a considerable number of fruits to fall in the case of Apples and Pears. We are not sure that dropping had ceased when our correspondents made their returns, as many refer to the trouble in a manner that suggests it was still going on, which would seem to indicate the presence of the larvae of the codling moth. But in the absence of high winds, there is every ground for assuming that the Apple crop generally will be heavy, and we venture to suggest that the results in many cases would have been better had thinning of the fruits been carried out with less timidity.

Our Grand Summary shows at a glance the reports from the whole of the United Kingdom and Ireland. As regards the Apple crop, out of 326 cases there are only 51 reports of deficient crops, as against 115 out of 297 last year. Pears are not so satisfactory, nor are they nearly so abundant as last year. Out of 323 returns 122 report the crops as below the average quantity. Plums will not compare for a moment with the splendid crop of last season; the returns show that there are 178 under the average out of 323 reports. Cherries were about equal to last season, whilst Peaches and Apricots fall a little from the high yield of 1914. Small fruits and Nuts, too, are very much the same as last year. Strawberries are less satisfactory, for last year there were only 50 deficient crops in 298 returns, whilst this year there are 114 in 323. Last year 116 crops were described as "over," but this year the number is only 62. There is little need to seek for the reason of this decline, for it may be traced directly and entirely to the early spring drought.

Our Supplementary Illustration.—

The three varieties of Roses depicted in the Supplementary Illustration are rather later in blooming than some Climbers, but in late July they are three of the most beautiful Ramblers for pergola, pillars or arches. Most will agree that American Pillar is the best of this type of flower, and a plant of this variety in the Rose Garden at Chalkwell Hall Park, Westcliff, is in superb blooming. It is the largest in the collection, the growths spanning a wide path overhead, the huge trusses of flowers hanging in festoons, and covering the supports on either side to the ground level. It is one of the finest specimens of a climbing Rose we have seen. Blush Rambler has a special charm in its delicately tinted blooms which wreath its support from top to bottom. Like American Pillar, it grows strongly, and is described in the National Rose Society's list as "one of the best of the Ramblers." Mrs. F. W. Flight is a deep pink variety and a vigorous grower, soon furnishing a trellis or archway. At the back of American Pillar may be seen the hedge of William Allen Richardson, which earlier gave a row of golden colour the whole length of the Rose garden.

R.H.S. NATIONAL DIPLOMA IN HORTICULTURE.—The following further candidates have secured the national diploma in horticulture in the sections set forth:—Section 1c.—Fruit growing under glass and in the open: FRANK A. GRIFFITHS; GEORGE STUART. Section 2.—Hardy fruit growing for market: CHARLES W. B. WRIGHT; HENRY GOUDE. Section 3f.—Market gardening—outdoor: FLORENCE M. VERRALL. Section 7.—Horticultural inspection: THOMAS RICHARDSON. W. Wilks, secretary.

THE GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.—On the invitation of Mr. and Mrs. STEPHEN MITCHELL, of Boquhan, the members of the society, to the number of between fifty and sixty, visited these gardens on the 10th inst. The company left George Square by motor char-a-bancs at 1.30 in the afternoon, arriving at Boquhan about two hours later. They were received by Mr. SHAW, head gardener, who conducted the visitors round the gardens. Afterwards the forester conducted the party through the beautiful glen and pointed out many of the finer trees which were much admired. The chairman, Mr. D. G. PURDIE, on behalf of the society, returned thanks to Mr. and Mrs. MITCHELL for their kindness in permitting the outing and in entertaining the visitors at tea.

WIMBLEDON PARK AND LAKE.—Wimbledon Town Council has now arranged for the purchase from Lady LANE of Wimbledon Park estate and lake, which have an acreage of some 150 acres, to be utilised as an open space. The Treasury at first refused to sanction the borrowing by the Corporation of £70,000, the sum required to complete the purchase, from the Ecclesiastical Commissioners. Now, however, they have agreed to make no objection to the raising by the Corporation of £30,000 from the Ecclesiastical Commissioners, on the understanding that no portion of the balance of the purchase money is to be borrowed during the continuance of the war. Lady LANE has agreed to allow the balance of £40,000 to lie on mortgage for a term of ten years.

FAMOUS GARDENS.—Through the kindness of Capt. GARNETT, of Wyreside, Lancaster, his famous Rose and herbaceous gardens were thrown open to the public on Wednesday last on behalf of the funds of the Royal Lancaster Infirmary. Delightful weather prevailing, a large number of the public of Lancaster and district were attracted to the charmingly situated seat, which commands views of woodland and pastoral scenery, and of the Lancashire sea-board. Since the death of Mr. R. L. GARNETT, known throughout the country as a rosarian, the direction of the horticultural specialities of Wyreside has fallen upon Mr. GERALD GARNETT,



AMERICAN PILLAR.



BLUSH RAMBLER.



ROSES IN CHALKWELL HALL PARK, WESTCLIFF-ON-SEA.

MRS. F. W. FLIGHT.

[Photographs by R. A. Malby.]

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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 52.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND										
N. O. Scotland, N. W.										
CAITHNESS	Over; very good	Average; good	.....	Average; good	.....	.....	Over; very good	Average	.....	W. F. Mackenzie, Thurso Castle Gardens, Thurso.
ELGIN	Average; good	Under; good	Under; good	Under; good	Under; good	Under; good	Over; good	Average; good	.....	John Macpherson, Mayne Gar- dens, Elgin.
ORKNEY	Average; good	Under; good	.....	Over; good	Under; very good	.....	Over; good	Average; good	.....	W. Liddell, Balfour Castle Gardens, Kirkwall.
ROSS-SHIRE	Average	Average	Under	.....	.....	.....	Average	Over	.....	W. Macdonald, Ben Damph Forest Gardens, Torridon.
	Over; good	Average; good	Average; good	Average; good	Under	.....	Average; good	Average; very good	.....	M. Martin, Novar House Gar- dens, Evanton.
SUTHERLAND	Under	Average	Under	Over	.....	.....	Average	Average	.....	D. Melville, Dunrobin Castle Gardens, Golspie.
I. Scotland, E.										
ABERDEENSHIRE	Over; good	Average; good	Average; good	Average; good	.....	.....	Average; good	Average; good	.....	James Grant, Rothienorman Gardens.
	Over	Under	Under	Under	.....	.....	Over	Over	.....	Simon Campbell, Fyvie Castle Gardens.
	Over	Average	Average	Over	.....	.....	Average	Average	.....	Wm. Henderson, Meldrum House Gardens, Old Meldrum.
	Over; good	Average; good	Under; good	Average; good	Average; very good	Average; very good	Under; good	Average; very good	.....	John McKinnon, Haddo House Gardens.
BANFFSHIRE	Over; good	Average	Under	Average	.....	.....	Average; good	Average; good	.....	George Edwards, Ballindalloch Castle Gardens.
BERWICKSHIRE	Average; good	Average; good	Over; very good	Average; very good	Average; good	Average; good	Average; very good	Over; very good	.....	Peter Smith, Duns Castle Gar- dens, Duns.
	Under	Under	Under	Under; good	.....	.....	Average; good	Average; very good	.....	Robert Stuart, Thirlestane Castle Gardens, Lauder.
	Average; very good	Under; very good	Under; good	Average; bad	Average; good	Average; good	Average; good	Average; very good	.....	Thomas Nelson, Milne Graden Gardens, Goldstream.
CLACKMANNAN- SHIRE	Average	Under	Under	Average	Under	Average	Over;	Under	Under	Alexander Kirk, Consulting Gardener, Alloa.
FIFESHIRE	Average	Average	Under	Under	Under	Average	Average	Under	.....	Chas. Simpson, Wemyss Castle Gardens, East Wemyss.
	Average; very good	Under	Under	Average; good	Average	Over; good	Average; good	Average; good	.....	D. McLean, Raith Gardens, Kirkcaldy.
	Average	Under	Under; bad	Average	.....	Under	Over; good	Average; good	.....	William Henderson, Balbirnie Gardens, Markinch.
FORFARSHIRE	Average	Under	Under	Under	.....	.....	Under	Over; good	.....	Robert Bell, Kinnaird Castle Gardens, Brechin.
	Over; very good	Average; good	Under; good	Under	.....	.....	Under	Average; good	.....	Andrew McAulie, Ruthven House Gardens, Meigle.
HADDINGTON- SHIRE	Under	Under	Under	Under	Average	Under	Average	Average	.....	John Black, Smeaton Gardens, Prestonkirk.
	Average; good	Under; good	Under; good	Under	Average; good	Average; good	Average; good	Under; bad	.....	R. P. Brotherston, Tynninghame Gardens, Prestonkirk.
KINCARDINESHIRE	Over	Under	Average	Average	.....	.....	Average	Average	.....	William Knight, Faspue Gar- dens, Laurencekirk.
	Average	Under	Under	Average	.....	.....	Average	Average	.....	William Thomson, Urie House Gardens, Stonehaven.
KINROSS-SHIRE	Over	.....	Average	Average	.....	.....	Average	Under	.....	Robert Fraser, Kinross House Gardens, Kinross.
LINLITHGOW- SHIRE	Average; good	Under; good	Under; good	Average; very good	Under; good	Under; good	Average; very good	Over; very good	.....	James Boyd, Newliston Gardens, Kirkliston.
	Average; good	Under; good	Under; bad	Over; very good	Average; good	Over; good	Under; good	Average; good	.....	John Highgate, Hopetoun Gar- dens, South Queensferry.
MIDLOTHIAN	Over; good	Under	Under; good	Average	.....	Over; very good	Average	Average; good	.....	A. C. Scott, Oxenford Castle Gardens, Ford.
	Average	Under	Under	Over	.....	Over	Over	Average	.....	D. Kidd, Carberry Tower Gar- dens, Musselburgh.
	Average	Under	Under	Average	Average	Average	Average	Average	.....	Wm. G. Pirie, Dalhousie Castle Gardens, Bonnyrigg.
	Average; good	Under	Under	Under	Average	Average	Under	Average	.....	James Whytock, Dalkeith Gar- dens, Dalkeith.
MORAYSHIRE	Over	Average	Under	Average	.....	.....	Under	Average	.....	James Jamieson, Easter Elchies Gardens, Craigellachie.
	Over; good	Under; good	Under	Average; good	Over; good	Over; good	Average	Average	.....	Chas. Webster, Gordon Castle Gardens, Fochabers.
PEEBLESHIRE	Under	Under	Under	Under	.....	.....	Average	Average	.....	Wm. McDonald, Cardrona Gardens, Inverleithen.
PERTSHIRE	Over; good	Under; good	Under; good	Average; good	.....	Over; good	Over; good	Average; good	.....	Thomas Lunt, Keir Gardens, Dunblane.
	Over	Over	Over	Under	.....	.....	Over	Average	.....	John Robb, Milnab Terrace, Crieff.
SELKIRKSHIRE	Over; very good	Average; very good	Under; very good	Average; good	.....	.....	Over; very good	Average; very good	Under; good	John C. Lunt, Bowhill Gardens, Selkirk.
6. Scotland, W.										
ARGYLLSHIRE	Average; good	Under	Under	Average; very good	Average; very good	.....	Average good	Over; very good	Average	D. S. Melville, Poltalloe Gardens, Lochliphead.
	Over; very good	Average	Over; very good	.....	.....	.....	Average	Average; good	Average	Henry Scott, Torloisk Gardens, Aros.
	Average	Average; good	Under	Average	.....	.....	Average; good	Over; good	Average	George Haig, Barchaldine Gar- dens, Ledaig.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
6. Scotland, W.										
AYRSHIRE.....	Under	Under	Under	Under	.....	.....	Average	Under	.....	William Priest, Eglinton Gar- dens, Kilwinning.
	Average ; good	Average ; very good	Average ; good	Over ; good	Over ; good	Average ; very good	Average ; very good	Under ; very good	Under ; bad	D. Buchanan, Bargany Gardens, Dailly.
	Over ; very good	Under ; good	Average ; good	Average ; bad	.....	.....	Over ; very good	Average ; good	.....	John McInnes, Kirkmichael House Gardens, by Maybole.
BUTESHIRE	Average	Average	Under	Average	.....	.....	Under	Average	.....	M. J. Heron, Mount Stuart Gar- dens, Rothesay.
	Average ; good	Over ; good	Average ; good	Over ; good	.....	.....	Over ; good	Over ; good	.....	D. Halliday, Ascog House Gar- dens.
DUMBARTONSHIRE...	Over	Over	Average	.....	Average	.....	Over	Average	.....	D. Stewart, Knockderry Castle Gardens, Cove.
	Average	Under	Average	Average	Average	.....	Average	Under ; very good	.....	David Kerr, Ross Priory Gardens, Gartochard.
DUMFRIESSHIRE	Average	.....	Under	Average	.....	Average	Under	Average	.....	John Urquhart, Hoddou Castle Gardens, Ecclefechan.
	Average ; very good	Under ; good	Average ; good	Average ; very good	.....	.....	Under ; good	Average ; very good	.....	James McDonald, Dryfeholm Gardens, Lockerbie.
INVERNESSSHIRE ..	Over	Average	Over	Average	.....	.....	Over	Over	.....	John A. Cargill, Raasay House Gardens, Kyle of Lochalsh.
KIRKCUDBRIGHT- SHIRE	Average	Under	Average	Over ; very good	Average	Average	Average ; good	Under	Over	David Wilson, Cairnsmore, Gardens, Falmure.
LANARKSHIRE	Average ; good	Under ; bad	Under ; bad	Under ; bad	Average ; good	.....	Under ; bad	Under ; good	.....	Wm. Archibald, Wishaw House Gardens, Wishaw.
	Under	Under	Under	Under	.....	.....	Under	Average	.....	John Shiells, Carstairs Gardens, Carstairs Junction.
RENFREWSHIRE	Average ; good	Average ; good	Under ; very good	Under	.....	.....	Under ; good	Average ; very good	.....	J. Plenderleith, Blythswood Gardens, Renfrew.
	Average	Under	Average	Under	Over	Over	Under	Average	.....	R. D. Smartt, Barochan Gardens, Houston.
STIRLINGSHIRE.....	Average ; very good	Average ; good	Average ; good	Over ; very good	Over ; very good	Average ; good	Average ; good	Over ; good	.....	John Middleton, Callendar House Gardens, Falkirk.
WIGTOWNSHIRE	Over ; very good	Average ; good	Over ; very good	Average ; good	.....	.....	Average ; good	Average ; good	.....	John Bryden, Dunragit Gar- dens, Dunragit.
	Over	Average	Over	Over	Average	.....	Average	Under	.....	Samuel Gordon Monreith House Gardens, Whauphill.
ENGLAND :										
2. England, N.E.										
DURHAM	Over ; good	Over ; good	Under	.....	.....	Average ; good	Over ; good	Over ; good	Average ; good	John Smith, Hylton House, North Road, Durham.
	Average ; very good	Under ; very good	Average ; good	Average ; very good	.....	Under ; good	Average ; good	Under ; bad	.....	W. Smith, Lambton Castle Gardens.
	Over	Average	Over ; good	Average	Over ; good	Average ; good	Over	Average	.....	E. Tindale, Ravensworth Castle Gardens, Gateshead.
NORTHUMBERLAND.	Over ; very good	Average ; very good	Under	Average	Average ; good	Over ; good	Average ; good	Average ; very good	.....	Walter Thomson, Alnwick Castle Gardens, Alnwick.
	Average ; good	Under	Under	Under ; good	Average	Average	Under ; good	Average ; good	.....	J. Thomas, Bywell Hall Gardens, Stockfield-on-Tyne.
YORKSHIRE.....	Average ; good	Over ; very good	Under ; bad	Under ; bad	Average ; good	Under ; good	Over ; good	Average ; very good	Under	Sidney Legg, Dalton Holme Gardens, Beverley.
	Average	Under	Average	Average	.....	Under	Average	Average	.....	A. S. Galt, Rutberglen, Roundhay, Leeds.
	Average ; very good	Over ; very good	Under ; good	Average ; good	Average ; good	Under ; good	Over ; very good	Over ; very good	Under ; good	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Under ; good	Average ; good	Average	Average ; good	Over ; good	Over ; good	Average ; good	Average ; good	.....	Alfred Gant, 61, Belle Vue Road, Leeds.
	Over ; good	Average ; good	Under	Under	Average ; good	Under	Over	Over ; good	.....	A. E. Sutton, Castle Howard Gardens, Welburn.
	Average ; good	Over ; very good	Under	Under ; bad	.....	Under ; good	Over ; very good	Under ; bad	.....	J. G. Wilson, Chevet Park Gardens, Wakefield.
	Over ; good	very good	Under ; good	Average	Average	Average ; good	Average	Average	.....	F. C. Puddle, Scampston Hall Gardens, Rillington.
	Over	Over	Over	Under	Average	Under	Average	Average	.....	C. Fulford, North Riding Asy- lum, York.
	Average ; good	Average ; good	Under ; bad	Over ; good	.....	Average	Over ; bad	Over ; good	Average	F. Jordan, Warter Priory Gar- dens, Pocklington.
3. England, E.										
CAMBRIDGESHIRE ..	Average ; good	Average ; good	Average ; good	Under ; good	Average ; very good	Under ; very good	Over ; very good	Average ; very good	Average ; good	R. Alderman, Babraham Gar- dens, Cambridge.
	Under	Average	Average	.....	.....	.....	Average	Average	.....	Stephen Castle, Walpole St. Andrews, Wisbech.
	Under ; good	Average ; very good	Average ; good	Under ; bad	Average ; very good	Under	Over ; very good	Under ; good	.....	Herbert Head, Hatley Park Gardens, Sandy.
	Average ; good	Average ; very good	Under ; good	Under ; good	Under ; good	Under ; good	Average ; good	Under ; good	.....	Arthur Sewell, The Palace Gar- dens, Ely.
	Under ; bad	Over ; good	Under ; good	Average ; good	Average ; very good	.....	Over ; good	Average ; good	Under ; good	Thomas Spooner, Meldreth Court Gardens, Royston.
	Average ; good	Under	Under	Under	Average	Under	Average	Over	Under	W. Woods, Chippenhams Park Gardens, Solihull.
ESSEX	Average ; very good	Average ; very good	Under ; good	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	Under	Arthur Bullock, Copped Hall Gardens, Epping.
	Average ; good	Under ; good	Under ; bad	Under ; good	Under ; good	Under ; bad	Average ; good	Under ; bad	Average ; good	C. Wakely, County Gardens, Chelmsford.
	Average	Average	Under	Under	Average	Under	Average	Under	.....	H. Lister, Easton Lodge Gardens, Dunmow.
	Over	Over ; very good	Under	Average ; good	.....	.....	Average ; good	Average ; good	.....	H. W. Ward, Rayleigh.
	Average ; bad	Average ; good	Under ; good	Over ; good	Average ; good	.....	Average ; good	Under ; good	Average	Edwin Gnile, Shortgrave Gar- dens, Newport.
	Over ; good	Average ; good	Under ; bad	Average ; good	Average ; good	.....	Average ; good	Average ; very good	Under ; good	S. T. Martin, Stisted Hall Gar- dens, Braintree.
HUNTINGDONSHIRE.	Over	Over	Over	Average	Average	Under ; bad	Average ; good	Under ; bad	Average	A. V. Coombe, Ramsey Abbey Gardens, Ramsey.
	Average ; very good	Average ; good	Under	Average ; good	Average ; very good	Under	Average ; very good	Under ; very good	.....	G. H. G., Huntingdon.
	Average ; good	Over ; very good	Under ; bad	Under ; bad	Average ; good	Under ; bad	Under ; bad	Average ; good	Average ; good	James Hewitt, Kimbolton Castle Gardens, Kimbolton.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5. England E.										
LINCOLNSHIRE	Over	Over; good	Average	Under	Average	Under	Average; good	Under	.....	F. J. Foster, Grimsthorpe Castle Gardens, Bourne.
	Average	Average	Under	Under	Average	Average	Average	Under	.....	H. Vinden, Harlaxton Manor Gardens, Grantham.
	Under; good	Under	Under	Under	Average; good	Under	Over; good	Over; very good	Average	Fred. Barton, Hainton Hall Gardens, Lincoln.
	Over	Average	Under	Under	.....	.....	Average	Under	.....	Joseph Robinson, Somerley Hall Gardens, Oakham.
	Over; very good	Average; good	Average; good	Under; good	Under	Under	Average; very good	Over; very good	.....	E. C. Norris, Elsham Hall Gardens, Grimshy.
NORFOLK	Average	Average; good	Under	Under; bad	Average	Under	Average; good	Average	Average	J. Wynn, Sedgeford Hall Gardens, near King's Lynn.
	Average good	Under; good	Under; good	Average good	Under; good	Average; good	Over; good	Under; good	.....	Henry Goudie, East Dereham.
	Over; good	Over; good	Under; bad	Average	Over; good	Under; bad	Average	Average; good	Average	William Orr, High House, Church Road, Downham Market.
	Average; good	Average; good	Under	Under	Under	Under	Over; good	Over; good	.....	Isaiah Johnson, Catton House Gardens, Norwich.
RUTLANDSHIRE	Over; good	Average; very good	Over; good	Over; good	Average; very good	Average; very good	Over; good	Over; good	Over; good	Wm. Smith, Lyndon Hall Gardens, Oakham.
	Over	Over	Average; good	Average	Under	Under	Over; good	Average	.....	W. Doidge, Barleythorpe Gardens, Oakham.
SUFFOLK	Average	Under	Under	Average	.....	.....	Average	Under; bad	.....	E. G. Creek, West Suffolk Hort.-Inst., Shire Hall, Bury St. Edmunds.
	Over	Average	Under	Under	Average	Under	Average	Under; bad	Average	W. Messenger, Woolverstone Park Gardens, Ipswich.
	Average; good	Under; good	Under; good	Under; bad	Average; very good	Under; good	Over; very good	Average; good	Under; good	Thomas Stilling, Livermere Park Gardens, Bury St. Edmunds.
	Average; very good	Under; good	Under	Average; good	.....	Under; good	Average; good	Average; very good	.....	H. Coster, Ickworth, Bury St. Edmunds.
	Average; very good	Average; good	Under; good	Over; very good	Under; good	.....	Over; good	Average; very good	Average; good	B. Goodacre, Moulton Paddocks Gardens, Newmarket.
	Over; very good	Average; very good	Under; good	Under; good	Under; good	Under; good	Over; very good	Average; very good	Average; good	James Hilson, Flinton Hall Gardens, Bungay.
	Average	Under	Under	Under	.....	.....	Under	Under	.....	R. Evans, Gt. Barton Gardens, Bury St. Edmunds.
	Over	Over	Under	Over	Average	Under	Over	Under	Average	Alfred Andrews, High House Gardens, Wickham Market.
	Average	Under	Under	Average; good	Average	Under	Average; good	Under; good	Average; good	A. K. Turner, Orwell Park Gardens, Ipswich.
	Average; good	Under	Under	Under	Average; good	Under	Under	Average	Average	William Low, Euston Hall Gardens, Thetford.
4. Midland Counties.										
BEDFORDSHIRE	Over; good	Over; good	Under; very good	Average; good	.....	.....	Under; good	Under; good	Over; very good	W. H. Neild, Woburn Experimental Fruit Farm, Ridgmont, Aspley Guise.
	Over; good	Over; very good	Under; bad	Average; good	Under; bad	Under; good	Average; good	Under; bad	.....	C. J. Ellett, Chicksands Priory Gardens, Shefford.
	Average	Under	Under; bad	Under	Average	Under; bad	Average; good	Average	Average	Wm. F. Palmer, Froxfield Gardens, Woburn.
	Over; good	Average; good	Average; very good	Average; good	Under; good	Under; good	Average; good	Average; very good	Under	Thomas W. Stanton, Hinwick Hall Gardens, Weltonborough.
	Average	Under	Under	Average	Under	Under	Average; good	Under	.....	T. Pepper, Oakley House Gardens, Oakley.
	Average; good	Over; good	Average; good	Average; good	Over	Average	Average	Under; bad	Over	Laxton Bros., Nurserymen, Bedford.
BUCKINGHAMSHIRE.	Under	Average; good	Under; good	Average; good	Average; good	Under	Over; good	Under; bad	Average; good	James Wood, Hedsor Park Gardens, Bourne End.
	Average; good	Average; good	Under; good	Under; bad	Under; good	Average; good	Under; bad	Under; good	Average; good	James MacGregor, Mentmore Gardens, Leighton Buzzard.
	Under; bad	Under; bad	Under; bad	Under; bad	Under; good	Under; good	Under; bad	Under; bad	Average	W. Hedley Warren, Aston Clinton Gardens, Tring.
	Over	Over	Average	Over	Under	Under	Average	Under	Over	Philip Mann, Education Sub-Office, Aylesbury.
	Over; very good	Average; good	Average; good	Average; good	.....	.....	Under; good	Under; bad	Average; good	Geoffrey Cooper, Bletchley Park Gardens.
	Average; very good	Average; good	Under; bad	Over; good	Under; good	Under; good	Under; good	Under; very good	Average; good	William Brooks, Missenden House Gardens, Aylesham.
	Average	Under	Average	Average	Average	.....	Over	Over	Average	W. Waters, Bulstrode Gardens, Gerrards Cross.
	Average; good	Average; very good	Under; good	Over; very good	.....	Under; bad	Average; very good	Average; very good	.....	G. F. Johnson, Waddesdon Gardens, Aylesbury.
	Average	Average; good	Average	Average; good	Average	Under	Average	Under	Average	Chas. Page, Dropmore Gardens, Maidenhead.
	Average; good	Average; good	Over; good	Over; good	Average; good	Under; bad	Over; good	Under; good	Average	Wm. Willericks, Langley Park Gardens, Slough.
CHESHIRE	Average; good	Average; good	Over; good	Average; good	.....	.....	Average; good	Under; good	Average; good	Alfred N. Jones, Marbury Hall Gardens, Northwich.
	Average	Under	Under	Average	Under	Under	Over	Over	Over	John Forsyth, Hawarden Castle Gardens, Chester.
	Under	Average	.....	Average	Average	Under	Average	Under	.....	Leon Squibbs, Bidston Court Gardens, Birkenhead.
	Over; good	Over; good	Over; good	Average	Average	Over; good	Average	Under	.....	Charles Black, Cholmondeley Castle Gardens, Malpas.
	Average; bad	Average; bad	Under	Average; good	Under	Under	Average; good	Average; good	.....	T. A. Summerfield, Alderley Park Gardens, Chelford.
	Over; good	Over; good	Average; very good	Over; good	Under; bad	Under; bad	Over; good	Average; very good	Under	Philip Bolt, Manor House Gardens, Middlewich.
	Average	Average; good	Under	Average	.....	Average	Average; good	Under; good	Under	N. F. Barnes, Eaton Hall Gardens, Chester.
	Average	Under	Under	Average	.....	.....	Average	Average	Average	James Atkinson, Torkington Lodge Gardens, Stockport.
	Average	Under	Under	Under	Under	Under	Average; good	Under	Under	William Wingfield, Doddington Hall Gardens, Nantwich.
DERBYSHIRE	Average; very good	Average; very good	Average; very good	Average; very good	.....	.....	Average; very good	Average; very good	.....	G. J. R., Derby.
	Average	Average	Average; good	Average; good	.....	Average; good	Over; good	Under; bad	.....	John Maxfield, Darley Abbey Gardens, Derby.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4. Midland Counties.										
DERBYSHIRE	Average ; good	Under	Under	Average ; good	.....	.....	Average ; very good	Under	.....	F. Jennings, Chatsworth Gar- dens, Chesterfield.
(continued)	Over ; good	Average ; good	Under ; bad	Average ; good	.....	Under ; bad	Average ; very good	Average ; good	.....	Jas. Tully, Osmaston Manor Gar- dens, Derby.
	Under ; good	Under	Under	.....	.....	.....	Average ; good	Average ; good	Under	E. Wilson, Hardwick Hall Gar- dens, Chesterfield.
	Over	Average	Under	Average	Average	Under	Average ; good	Under	Average	J. H. Goodacre, Elvaston Castle Gardens, Derby.
	Average ; good	Over ; good	Under ; bad	Average ; good	.....	.....	Average ; good	Average ; good	.....	F. G. Mills, Laneside House Farm, Glossop.
HERTFORDSHIRE	Over ; good	Average ; good	Under	Under ; bad	Average	Under	Average ; good	Under ; good	Average	Thomas Nutting, Childwick- bury Gardens, St. Albans.
	Average	Average ; good	Average ; good	.....	.....	.....	Under ; good	Under	.....	Messrs. T. Rivers & Son, Saw- bridgeworth.
	Average	Average ; good	Average ; very good	Over ; good	Average ; good	Average	Average	Under	Under	Edwin Beckett, Aldenham House Gardens, Elstree.
	Average	Average ; good	Average	Over ; good	Under ; bad	Under	Over ; very good	Under	Under	J. G. Walker, Oak Hill Park Gardens, East Barnet.
	Under	Under	Under	Average	Average	Average	Average	Average	Under	E. F. Hazelton, North Mymms Gardens, Hatfield.
	Average ; good	Under ; good	Average ; good	Under	Over ; very good	Under ; good	Over ; very good	Under ; bad	.....	Charles A. Heath, Gt. Hallingbury Place Gdns., Bishop's Stortford.
	Average ; good	Over ; very good	Under	Under ; good	Over ; very good	Under	Over ; very good	Under ; bad	Average	F. Fitch, Balls Park Gardens, Hertford.
LEICESTERSHIRE	Over ; good	Average ; good	Average ; good	Under ; good	Average ; good	.....	Over ; good	Average ; good	Under ; good	D. Roberts, Prestwold Gardens, Loughborough.
	Over ; very good	Average ; very good	Under ; good	Over ; very good	Average ; very good	Over ; very good	Average ; good	Average ; very good	Over ; good	W. H. Divers, Belvoir Castle Gardens, Grantham.
	Over ; bad	Average ; good	Under ; good	Under ; bad	Over ; good	Under ; good	Over ; very good	Under ; bad	.....	Herbert S. Tyers, Ratcliffe Hall Gardens, Ratcliffe-on-Wreake.
	Average ; good	Average ; good	Under ; very good	Under ; bad	Under ; very good	Under ; very good	Average ; good	Under ; very good	Under	W. Patterson, Swithland Hall Gardens, Loughborough.
NORTHAMPTON- SHIRE	Average ; good	Average ; good	Under ; good	Under ; good	Average ; good	Under ; good	Under ; good	Under ; good	Under	Robt. Johnston, Wakefield Lodge Gardens, Stony Stratford.
	Under ; good	Average ; very good	Under ; good	Average ; good	Under ; bad	Under ; good	Over ; good	Average ; good	Average ; very good	C. F. Crump, Althorp Park Gar- dens, Northampton.
	Average ; good	Over ; good	Under ; bad	Under ; bad	Under ; good	Under ; bad	Over ; very good	Under ; bad	Average ; very good	John Meager, Harrowden Hall Gardens, Wellingborough.
	Over ; very good	Under ; bad	Average ; good	Average ; good	.....	.....	Over ; very good	Average ; good	.....	Albert Child, Catesby House Gardens, Daventry.
	Over ; good	Average ; good	Over ; very good	Over ; very good	Over ; good	Average ; good	Over ; very good	Over ; very good	Under ; good	Richard D. Greenham, Fawsley Park Gardens, Daventry.
NOTTINGHAMSHIRE.	Over ; very good	Over ; very good	Under ; bad	Over ; very good	Under ; bad	Under ; good	Over	Average ; good	.....	James B. Allan, Osberton Gar- dens, Worksop.
	Average ; good	Average ; good	Under ; good	Under ; bad	Average ; good	Under ; bad	Average ; good	Under	Average	J. R. Pearson & Sons, Lowdham.
	Average ; very good	Average ; very good	Under	Average ; good	Average ; good	Average	Average ; good	Under ; bad	Average	S. Barker, Clumber Park Gar- dens, Worksop.
	Average ; good	Average ; very good	Average ; good	Average ; good	Average ; good	Under ; good	Over ; very good	Under ; bad	Under ; bad	F. W. Parkes, Wollaton Hall Gardens, Nottingham.
	Average ; good	Average ; good	Under ; bad	Over ; very good	Under ; good	Under ; bad	Over ; good	Over ; very good	Under ; bad	T. P. Eyre, Wallingwells Hall Gardens, Worksop.
	Over	Over	Average	Under	.....	Average	Over	Average	Average	James Gibson, Welbeck Abbey Gardens, Worksop.
OXFORDSHIRE	Average ; good	Average ; very good	Over ; very good	Average ; good	Average ; good	.....	Average ; good	.....	Average ; good	John A. Hall, Shipplake Court Gardens, Henley-on-Thames.
	Under	Average	Over	Average	.....	Under	Over	Average	.....	Arthur J. Long, Wyfold Court Gardens, Reading.
	Average	Under	Under	Under	.....	Under	Average	Average ; good	.....	T. Craddock, Middleton Park Gardens, Bicester.
	Average ; good	Average ; good	Average ; good	Average ; good	Over ; good	Under ; good	Average	Average ; good	Under	C. E. Munday, Nuneham Park Gardens, Oxford.
	Under ; very good	Average ; good	Under ; bad	Under ; bad	Average ; very good	Under ; good	Over ; good	Under ; good	.....	T. W. Whiting, Shotover Park Gardens, Wheatley.
	Average	Over ; good	Average	Average	Average	Average	Average	Under	Under	W. Mills, Caversham Park Gar- dens, Reading.
SIRROPSHIRE	Average	Under	Under	Under	Average	Under	Over	Over	Over	Alex. Haggart, Moor Park Gardens, Ludlow.
	Average ; good	Average ; good	Average ; good	Under ; bad	.....	.....	Average ; bad	Average ; good	.....	G. T. Malthouse, Harper- Adams Agricultural College, Newport.
	Average	Average	Average	Average	Average	Under	Average	Average	Average	George Risebrow, Hatton Grange Gardens, Salford.
	Over	Average	Over	Over	Under	Under	Over	Average	Average	W. Y. Staward, Aston Gardens, Oswestry.
	Under	Average	Average	Over	Under	Under	Over	Average	.....	George Adams, Lilleshall Gar- dens, Newport.
	Under	Under	Under	Average ; good	.....	Under	Average ; good	Under ; bad	Average	George Clark, Walcot Gardens, Lydbury North.
STAFFORDSHIRE	Over	Average	Over	Over	Average	Under	Under	Over	Under	Edwin Gilman, Ingestre Gar- dens, Stafford.
	Average ; good	Average ; good	Over	Under	Average	.....	Average	Average	.....	A. Cheney, Shenstone Court Gardens, Lichfield.
	Over ; very good	Average ; good	Under ; bad	Average ; bad	.....	Under ; bad	Over ; very good	Over ; very good	Under	T. Bannerman, Blithfield Gar- dens, Rugeley.
	Average ; good	Average ; good	Average ; good	Under ; good	Average ; good	Under ; bad	Average ; good	Under ; bad	Under ; good	H. Collier, Rollestone Hall Gar- dens, Burton-on-Trent.
	Average	Average	Average	Over	Average	Under	Average	Average	Average	W. Halliday, Patshull Gardens, Wolverhampton.
	Over ; good	Over ; good	Average ; good	Average ; good	Average ; good	Under ; bad	Over ; very good	Average ; good	.....	Wm. Morrison, Beau Deser Gardens, Rugeley.
	Average ; good	Average ; very good	Under	.....	.....	.....	Under ; very good	Under ; very good	.....	M. Huntley, Old Fallings Hall Gardens, Wolverhampton.
WARWICKSHIRE	Under ; good	Average	Average	Average ; good	.....	Under ; bad	Average ; very good	Under ; very good	Over ; very good	Chas. Harding, Ragley Hall Gardens, Alcester.
	Over ; very good	Average ; very good	Average	Under ; good	Average ; good	Under ; good	Average ; good	Under ; good	.....	H. Dunkin, Mount Pleasant Gardens, Warwick.
	Over ; good	Average ; very good	Over ; good	Average ; good	Under ; bad	Under ; bad	Average ; good	Under ; good	.....	H. F. Smale, Warwick Castle Gardens, Warwick.
	Average	Average	Over	Under	Average	.....	Average	Under	Average	J. Smith, Wellesbourne House Gardens, Warwick.
	Average ; good	Under ; good	Under ; bad	Average ; good	Under ; bad	Under ; good	Average ; good	Average ; good	Under ; bad	W. Harman, Newnham Paddox Gardens, Lutterworth.
	Average ; good	Average ; good	Average ; good	Average ; good	Under ; good	Under ; good	Over ; good	Average ; good	Average ; good	Wm. Haylock, Ettington Park Gardens, Stratford-on-Avon.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5. Southern Counties.										
BERKSHIRE	Average	Over	Average	Average	Over	Under	Over	Average	Over	A. MacKellar, Royal Gardens, Frogmore, Windsor.
	Over	Average	Under	Average	Average ; good	Under	Average	Average	Average	J. Howard, Benham Park Gardens, Newbury.
	Average	Under	Under	Average	Average	Under	Average	Under	Average	A. B. Waddis, Englefield Gar- dens, Reading.
	Average	Under	Under	Average	Average ; good	Under	Over ; good	Average ; good	.....	F. J. Thorne, Sunningdale Park Gardens, Sunningdale.
	Average ; good	Under ; good	Under ; very good	Average ; good	Over ; good	Under ; very good	Over ; good	Average ; very good	Under ; good	F. Rivers, Carswell Manor Gar- dens, Faringdon.
	Over ; good	Under	Average ; good	Average ; Under	.....	Under	Average ; good	Average ; good	Average ; good	E. Harriss, Lockinge Park Gar- dens, Wantage.
	Average ; good	Average ; good	Under	Over ; good	Under ; good	.....	Over ; good	Average ; good	.....	W. Oliver, Park Place Gardens, Henley-on-Thames.
	Average	Under	Average	.....	Average	.....	Average	Under	Under	J. Atkinson, Oakley Court Gar- dens, Windsor.
	Average	Average	Under	Average	Average	Under	Average	Average	.....	William Tapping, Shinfield Manor Gardens, nr. Reading.
	Over	Average	Average	Under	Over	Under	Over	Under	Over ; very good	Thomas Wilson, Castle Gardens, Wallingford.
	Average	Under	Average	Over	Average	Under	Average	Average ; good	Under	C. E. Lever, Hungerford Park Gardens, Hungerford.
	Average ; good	Average	Average	Under	Average	Average ; good	Average ; good	Under ; bad	Average	William Turnham, Greenlands Gardens, Henley-on-Thames.
	Over ; good	Average ; very good	Under ; good	Under	Under ; good	.....	Average ; good	Under ; bad	.....	L. T. Petty, Arlington Manor Gardens, Newbury.
	Over ; good	Average ; very good	Average ; good	Under ; good	Over ; good	Under	Average very good	Under ; very good	.....	John T. Tubbs, Bearwood Gar- dens, Wokingham.
DORSETSHIRE	Under ; bad	Under ; bad	Under	Under	Average	.....	Average ; very good	Average ; bad	Average	T. Turton, Castle Gardens, Sherborne.
	Under ; good	Under ; good	Under ; good	Under ; bad	Under	Under ; good	Over ; very good	Under	Under	Thos. Denny, Down House Gardens, Blandford.
	Average ; good	Under	Under	Average ; good	Average ; good	Under ; bad	Under ; good	Average	.....	J. Jaques, Bryanston Gardens, Blandford.
	Average ; good	Average ; good	Average ; very good	Under ; bad	Average ; very good	.....	Over ; very good	Under ; bad	.....	F. Oliver, Minterne Gardens, Cerne Abbas.
	Under ; good	Under ; good	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	Average	E. C. Parslow, County Offices, Dorchester.
	Average ; good	Under ; bad	Under ; good	Under ; very bad	.....	.....	Under ; bad	Average ; good	.....	H. Kempshall, Abbotsbury Castle Gardens, Dorchester.
HAMPSHIRE	Over ; good	Average ; very good	Over ; very good	Over ; good	Average ; good	Average ; very good	Over ; very good	Under ; good	Over ; very good	Lewis Smith, Cadland Park Gar- dens, Fawley, Southampton.
	Under ; bad	Average ; good	Under ; bad	Average ; very good	Over ; very good	Average ; good	Over ; very good	Over ; very good	.....	A. J. Legge, Dogmersfield Park Gardens, Winchester.
	Average ; good	Over ; very good	Under ; good	Average ; good	Under ; bad	Under ; bad	Over ; very good	Over ; very good	Over ; good	Henry Martin, Bartley Lodge Gardens, Cadnam, South- ampton.
	Over ; very good	Under ; good	Average ; good	Average ; good	Average	Under	Over ; good	Over ; good	Average	A. W. Blake, Highclere Castle Gardens, Newbury.
	Under ; good	Average ; good	Average ; good	Average ; good	Average ; good	Under ; good	Average ; good	Average ; good	Average	Henry Tullett, Ashe Park Gar- dens, Overton.
	Under	Under	Under	Under	.....	.....	Average	Average ; very good	Average	L. Carsley, Stratton Park Gar- dens, Micheldever.
	Average ; bad	Average ; good	Average ; very good	Average ; good	Under ; bad	.....	Over ; very good	Average ; good	Over ; very good	E. M. Pacey, Swanmore Park, Bishop's Waltham.
	Average ; good	Average ; good	Average ; good	Average ; good	Under	Average ; good	Average ; good	Average ; good	Average ; good	J. W. Inckingham, Milland Place Gardens, Liphook.
KENT	Average	Average	Under	Average	Average	.....	Average	Under	Average	George Woodward, Barham Court Gardens, Maidstone.
	Average	Over	Average	Average	.....	.....	Average	Under ; bad	.....	George Bunyard, Royal Nur- series, Maidstone.
	Under	Over ; good	Under	Average	Over ; good	.....	Over ; good	Average	Average	William Lewis, East Sutton Park Gardens, Maidstone.
	Over ; bad	Average	Under ; bad	Under	.....	.....	Under	Under	Over	Geo. Fennell, Bowden, Ton- bridge.
	Under	Under	Under	Average	.....	.....	Under	Average	Average	Geo. Lockyer, Mereworth Gar- dens, Maidstone.
	Under	Under	Under ; bad	Over ; good	Over ; very good	Average ; good	Average ; good	Under	.....	J. T. Shann, Bettshanger Park Gardens, Eastly.
	Under	Average	Average	.....	.....	.....	Over	Under	.....	Charles E. Shea, The Elms, Foots Cray.
	Average	Average ; good	Under ; good	Average ; good	Average ; good	Under ; good	Under ; good	Under ; good	Under	J. G. Weston, Eastwell Park Gardens, Ashford.
MIDDLESEX	Average	Average	Average	Average	Over	Under	Average	Under	Under	H. Markham, Wrotham Park Gardens, Barnet.
	Average	Over	Average	Average	Average	.....	Average	Under	.....	W. Poupart, Marsh Farm, Twickenham.
	Average	Average	Under	Under	.....	.....	Over	Average ; good	Average	James Hawkes, Osterley Park Gardens, Isleworth.
	Average ; good	Under	Under	Average	Average	.....	Average	Under	Average	W. Bates, Cross Deep Gardens, Twickenham.
	Average ; good	Average ; good	Under ; bad	Over ; very good	Under ; good	.....	Over ; good	Under ; good	.....	James Hudson, Gunnersbury House Gardens, Acton.
SURREY	Average	Over	Under	.....	Under	.....	Average	Average	Over	S. T. Wright, R.I.L.S. Gardens, Wisley, Kipsley.
	Over	Over	Average	Over	Under	Under	Average	Average	Over	Geo. Kent, Norbury Park Gar- dens, Dorking.
	Average	Under ; good	Under ; good	.....	.....	.....	Average ; good	Under ; good	Average ; good	Geo. Halsey, Riddings Court Gardens, Caterham Valley.
	Over	Average	Average	Average	.....	.....	Average	Under	Under	James Watt, Myntburn Gar- dens, Reigate.
	Under	Under	Average	Under	Average	Under	Over	Over	Average	James Lock, Otlands Lodge Gardens, Weybridge.
	Average ; good	Average ; very good	Under ; bad	Average ; good	Average ; good	.....	Over ; very good	Average ; very good	.....	Thos. Smith, Combe Court Gardens, Kingston Hill.
SUSSEX	Average	Average	Under	Under	Average	Under	Over	Under	Over	J. Muddell, Sedgwick Park Gardens, Horsham.
	Average ; good	Average	Under ; bad	Average	Average ; good	Under	Average ; good	Under	Average	A. Wilson, Eridge Castle Gar- dens, Tunbridge Wells.
	Under ; bad	Average ; good	Under ; good	Average ; bad	.....	.....	Under ; good	.....	Over	William E. Bear, Magham Down, Hailsham.
	Over	Average ; good	Average ; Under	Under ; bad	Under ; good	Average ; good	Average	Under ; bad	.....	W. H. Smith, West Dean Park Gardens, Chichester.
	Average	Under ; good	Under	Average ; good	Under	Under	Average	Under	.....	W. Goring, Agricultural Col- lege, Uckfield.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5. Southern Counties.										
WILTSHIRE	Over; good	Average; good	Under; good	Average	Under	Under	Average; good	Average; good	.....	George Brown, Bowood Gardens, Calne.
	Average; good	Over; very good	Under; good	Under; good	Over; very good	Average; good	Average; good	Under; bad	Average; good	Thomas Challis, Wilton House Gardens, near Salisbury.
	Average	Under	Average	Under	.....	.....	Average	Under	.....	Thomas Sharp, Westbury.
	Average; good	Under; good	Average; good	Under	Average; good	Under	Average; good	Under; good	Average	T. W. Birkinshaw, Compton Bassett Gardens, Calne.
7. England, N.W.										
CUMBERLAND.....	Average	Under	Under	Over	.....	.....	Average	Average; good	.....	Andrew Watt, Naworth Castle Gardens, Brampton.
	Over; good	Under	Under	Under; good	Average; good	.....	Over; good	Average	.....	J. L., Cockermouth.
LANCASHIRE	Average	Under	Under	.....	Average	Under	Average	Average	.....	James Gibbons, Croxeth Park Gardens, Liverpool.
	Average; good	Under; good	Under; bad	Average; very good	.....	.....	Over; very good	Average; good	.....	Joseph Harris, Gawthorpe Hall Gardens, Burnley.
	Average	Under	Under	Average	Under	.....	Average	Over	.....	Joseph Stoney, Roseleigh Gardens, Wootton.
	Average; very good	Average; very good	.....	Over; very good	.....	.....	Over; very good	Average; very good	.....	C. H. Cook, Knowsley Hall Gardens, Prescot.
WESTMORELAND	Average; good	Under; bad	Average; good	Average; good	.....	.....	Average; good	Average; good	.....	W. A. Miller, Underley Hall Gardens, Kirkby Lonsdale.
	Average; good	Under	Under	Average	.....	Average	Under	Under	Under	J. Moorhouse, Dalton Hall Gardens, Burton.
	Over	Average	Over	.....	Average	.....	Over	Average	.....	W. Caton, Helme Lodge Gardens, Kendal.
	Average	Average	Average	Over	.....	.....	Average	Under	.....	Richard F. Lambe, Witherslack Hall Gardens, Grange-over-Sands.
8. England, S.W.										
CORNWALL	Under	Average; good	Average	Under	Over; good	.....	Average; good	Average; good	.....	W. Andrews, Tregotbman Gardens, Truro.
	Under	Under	Under	Average	Over; good	.....	Over; very good	Over; good	.....	Frank J. Clark, Tehidy Park Gardens, Camborne.
	Average	Under	Under	Under	Over; very good	.....	Average	Over; good	.....	J. Spilsbury, Clowance and Penearrow Gardens, Praze.
DEVONSHIRE	Over; good	Average; good	Under; good	Average; good	Average; bad	Under; bad	Over; good	Average; good	Under	E. E. Bristow, Castle Hill Gardens, South Molton.
	Average; good	Average; bad	Under; bad	Over; good	Over; very good	Under; bad	Average; good	Under; good	.....	Thomas H. Bolton, Powderham Castle Gardens, Exeter.
	Average	Average	Over	Average	Under	Average	Average; good	Under; bad	Average	Robert Veitch & Son, Royal Nurseries, Exeter.
	Under; very good	Average; good	Over; good	Average; good	Average; good	Under; good	Average; very good	Average; good	.....	W. Lock, Eastcliffe Gardens, Teignmouth.
GLOUCESTERSHIRE..	Average; good	Under; bad	Average; good	Under; bad	Average; good	Under; bad	Over; very good	Average; good	Average; good	E. H. High, Eiston Gardens, East Budleigh.
	Average	Average; good	Average; good	Under	Under	Under	Average	Under	Average	William Koen, Bowden Hall Gardens, near Gloucester.
	Average	Under; good	Over; good	Average	Average; good	Under	Over; good	Average; good	Under	John Banting, Tortworth Gardens, Falfield.
	Average; good	Under; good	Average; very good	Average; good	Over; good	Under; good	Average; good	Average; good	.....	J. Pearce, Badminton Gardens, Gloucester.
	Average	Average	Under	Average	Average	Average	Average	Under	.....	Wm. J. Jefferies, Cirencester.
	Average	Average	Average	Over	Under	Average	Average	Average	Under	G. H. Hollingworth, County Education Office, Gloucester.
HEREFORDSHIRE.....	Average; good	Average; good	Average; good	Average; good	Average; good	Average; good	Over; very good	Over; very good	.....	F. C. Walton, Stanley Park Gardens, Stroud.
	Under	Average; good	Average; good	Average; good	Average; good	Under	Average; good	Average	Average	Arthur Chapman, Westonbirt Gardens, Tetbury.
	Average; good	Average; good	Average; good	Average; good	Average; good	Under	Over; good	Average; good	Average	W. H. Berry, Highnam Court Gardens, Gloucester.
	Over; very good	Under; good	Under; good	Over	Over	Over	Over	Over	.....	A. Buckingham, Stanage Park Gardens, Brampton Bryan.
MONMOUTHSHIRE ...	Average; good	Under; good	Under; good	Under; good	Under; good	Under	Over; good	Average; good	Average; good	Thomas Spencer, Goodrich Court Gardens, Ross.
	Average; good	Under; good	Under; bad	Under; bad	Average; good	Under; bad	Average; good	Under; good	Average; good	George Mullins, Eastnor Castle Gardens, Ledbury.
	Very good	.....	.....	.....	.....	.....	.....	.....	.....	A. J. Morris, Downton Castle Gardens, Ludlow.
	Average	Over	Over	Over	.....	.....	Under	Over	.....	H. E. Durham, Herefordshire Association of Fruitgrowers and Horticulturists.
SOMERSETSHIRE	Average; good	Under; very good	Under; very good	Under; good	Average; very good	Under; good	Average; good	Over; good	Under; good	Thos. Coomber, The Hendre Gardens, Monmouth.
	Under	.....	Under	Average	Under	.....	Under	Average	.....	W. H. Beale, Llanwrn Park Gardens, Newport.
	Under; good	Under; good	Under; good	Under; bad	Average; good	Under	Average; good	Average; good	Average	George Shawley, Halswell Park Gardens, Bridgewater.
	Average; good	Over; very good	Over; good	Average; good	Over; good	Average; good	Average; good	Average; good	Average; good	J. T. Rushton, Barons Down Gardens, Dulverton.
	Under	Under	Under	.....	.....	.....	Average; good	Under; bad	Average	E. A. Hussey, Leigh House Gardens, near Chard.
WORCESTERSHIRE ..	Average; good	Average; good	Average; good	Average; good	Under	Under	Over; good	Average	Average	A. Young, Witley Court Gardens, Worcester.
	Over; good	Over; very good	Over; good	Average; good	Over; good	Average; good	Average; good	Average; good	Average; good	W. Crump, Madresfield Court Gardens, Malvern.
	Under	Under	Under	.....	.....	.....	Average; good	Under; bad	Average	Ernest Avery, Finstall Park Gardens, Bromsgrove.
	Average; good	Under; good	Average; good	Over; good	.....	Average; good	Average; good	Under; good	Under	James Udale, Ombersley Road, Droitwich.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
WALES :										
ANGLESEY	Average ; good	Average ; good	Average ; good	Under ; good	Average ; good	.....	Average ; good	Under ; good	Average	W. Tiso, Glyn Garth Palace Gar- dens, Menai Bridge.
CARDIGANSHIRE	Over ; very good	Under ; good	Over ; good	Under ; good	.....	Under ; bad	Over ; very good	Under ; good	.....	Thomas Hazzeldine, Crosswood Park Gardens, Aberystwyth.
CARMATHENSHIRE	Over ; very good	Under ; good	Under ; good	Over ; good	Over ; very good	.....	Over ; very good	Over ; good	.....	W. Phillips, Derry Onmond Park Gardens, Llangeby.
CARNARVONSHIRE	Average ; good	Average	Average	.....	.....	.....	Over ; good	Average ; good	.....	A. E. Cook, Clymaenllwyd Gar- dens, Llanelly.
DENBIGHSHIRE	Average ; good	Under ; bad	Under ; bad	Average ; good	Average ; very good	.....	Over ; very good	Over ; very good	.....	J. S. Higgins, Glynllivon Park Gardens.
FLINTSHIRE	Under ; good	Under	Average	Average	Average	Average	Over ; good	Over ; good	Average	J. Martin, Bryn Estyn Gardens, Wrexham.
GLAMORGANSHIRE	Average ; good	Average	Under	Average	Under	Average	Average	Average ; good	Average	J. A. Jones, Chirk Castle Gardens, Rhabod.
MONTGOMERYSHIRE	Under ; good	Under ; good	Average ; good	Average ; good	Under	Average ; good	Over	Average ; good	.....	J. Barnard, Mostyn Hall Gar- dens, Mostyn.
PEMBROKESHIRE	Average ; good	Under ; good	Under	Over ; good	Over ; good	.....	Over ; good	Over ; very good	.....	Richard Milner, Margam Park Gardens, Port Talbot.
RADNORSHIRE	Average ; good	Average ; good	Average ; good	Over ; very good	Over ; very good	.....	Over ; very good	Over ; very good	Average	C. T. Warmingtton, Penllergaer Gardens, Swansea.
.....	Over ; good	Average ; good	Over ; good	Under ; bad	.....	.....	Average ; good	Under ; good	.....	A. Gribble, Plas Machynlleth Gardens, Machynlleth.
.....	Over	Under	Average	Average	Under ; bad	.....	Average	Under	Average	Geo. Griffin, Slebeck Park Gardens, Haverfordwest.
.....	Average	Average	Over	Under	Over	Average	Over	Under	Average	W. A. Baldwin, Clyffnew Gar- dens, Boncath.
.....	Average ; good	Under ; good	Under	Average	.....	.....	Average	Under	Under	Wilson Palfrey, Norton Manor Gardens, Norton, R.S.O.
IRELAND :										
9. Ireland, N.										
ARMAGH	Over ; very good	Over ; very good	Over ; very good	Under ; good	Average ; very good	Under ; good	Average ; very good	Under ; very good	Average ; good	William H. Hall, Tandragee Castle Gardens.
CAVAN	Over	Average	Under	Under	Average	.....	Over	Over	Average	J. McCann, Arley Mount Nugent
DOWN	Under	Under ; bad	Average	Over ; good	.....	.....	Over ; very good	Average ; good	.....	T. W. Bolas, Mount Stewart Gardens, Newtownards.
DUBLIN	Average ; good	Under ; good	Under	Under	Over ; very good	Under	Under ; good	Over ; very good	.....	Robt. Duthie, Chief Secretary's Lodge Gardens, Phoenix Park, Dublin.
FERMANAGH	Under ; good	Under ; good	Over	Average	Average	.....	Over ; good	Over ; good	.....	Thomas Shiels, Lanesborough's Gardens, Belturbet.
LEITRIM	Under ; good	Average ; good	Over ; good	Average	.....	.....	Average ; very good	Over ; good	Average	J. Moncrieff, Florence Court Gardens, Enniskillen.
LONDONDERRY	Under ; good	Under ; good	Over ; very good	Under ; good	.....	Under	Over ; very good	Over ; very good	.....	Duncan McGregor, Derrycarne Gardens, Dromod.
MEATH	Over	Average	Average	Under ; good	.....	.....	Average ; good	Under ; good	.....	G. M., Givagh
MONAGHAN	Under	Under ; bad	Average ; good	Over ; very good	.....	.....	Over ; very good	Over ; very good	Over	Michael McKeown, Julians- town, Drogheda.
TYRONE	Over ; good	Average	Under ; good	Over ; very good	Average	Under	Over ; very good	Average ; very good	Under	J. B. Pow, Dunsany Castle Gardens.
WESTMEATH	Over ; good	Average ; good	Average ; good	Average ; good	.....	.....	Over ; very good	Average ; good	.....	J. Hepburn, Dartrey Gardens.
.....	Over	Under	Average	Average	.....	.....	Average	Average ; very good	.....	Fred. W. Walker, Sion House Gardens, Sion Mills.
.....	Over	Under	Over	Over	Over	Under	Over	Under	Average	Geo. Bogie, Pakenham Hall Gardens, Castlepollard.
10. Ireland, S.										
CARLOW	Average	Average	Over	Average	Average	Average	Over	Over	.....	William M. Foulds, L'snavagh Gardens, Rathvilly.
CLARE	Average ; good	Average	Under	Under	Average	Under	Average ; good	Average ; good	.....	Alfred Everard, Cahiracon Gar- dens, Ennis.
CORK	Over	Under	Average	Average	.....	.....	Average	Over	.....	Maurice Colbert, Aghern Gar- dens, Coma.
.....	Average ; good	Average ; good	Average ; good	.....	.....	.....	Average ; good	Average ; very good	.....	L. Deunbury, Magazine Road, Cork.
KERRY	Over ; good	Average ; good	Under ; good	Average	.....	.....	Over ; very good	Over ; very good	.....	Pat Sheehan, Glenville Manor Gardens, Fernoy.
KILKENNY	Over ; very good	Over ; good	Over ; very good	Over ; good	Over ; very good	.....	Over ; very good	Average ; very good	.....	William H. Arran-Smith, Derrreen Gardens, Kenmare.
KILDARE	Over ; good	Under	Over	Average ; good	Under	Over ; very good	Over ; very good	Over ; very good	Average	T. E. Tomlin, Bassborough Park Gardens, Piltown.
.....	Over	Over	Average	Over	Over	Over	Over	Over	.....	Frederick Bedford, Straffan House Gardens.
KING'S CO.	Over ; good	Average ; good	Over ; good	Over ; good	Over ; good	Over ; good	Over ; good	Over ; good	Average	Alex. Black, Carton Park Gar- dens, Maynooth.
LIMERICK	Average ; good	Under ; bad	Over ; good	Under ; bad	Average ; good	.....	Over ; very good	Under ; good	.....	E. Clarke, Claremount, Garry Castle, Banagher.
LONGFORD	Average ; good	Average	Under	Under	Over ; good	.....	Over ; good	Average ; good	.....	Harry Nixon, Rockbarton Gar- dens, Kilmallock.
QUEENS COUNTY	Over ; very good	Average ; good	Average ; good	Average ; good	Average ; good	.....	Over ; very good	Over ; very good	.....	J. A. Boyle, Castle Forbes Gar- dens, Newtown Forbes.
ROSCOMMON	Average	Average	Average ; good	Average	Average	.....	Over	Average ; good	Under	G. McGlashan, Abbey Leix House Gardens.
WATERFORD	Over	Under	Average	Under	Over ; good	Under	Average ; good	Over ; good	Under	Terence Rogers, Frenchpark House Gardens.
WICKLOW	Under ; bad	Under ; bad	Under ; bad	Average	Over ; very good	Average ; good	Over ; good	Under ; bad	.....	David Cronin, Carraghmore Gardens, Portlaw.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. Bailey, Glenut Castle Gar- dens, Arklow.
CHANNEL ISLANDS :										
GUERNSEY	Average ; good	Under ; good	Under ; good	Under ; good	Under ; good	.....	Under ; good	Under	.....	C. Smith & Son, Caledonia Nursery, Guernsey.
JERSEY	Under ; good	Under ; good	Under ; bad	Under ; bad	Under ; good	Under ; bad	Average ; good	Average ; good	.....	Thomas Sharrman, Imperial Nursery, St. Heliers.
ISLE OF MAN :										
DOUGLAS	Over ; good	Average ; good	Under ; bad	Average ; good	.....	.....	Over ; good	Over ; good	.....	James Inglis, Brunswick Road Nursery.

SUMMARIES OF THE HARDY FRUIT CROPS.

SCOTLAND.										IRELAND.									
Records	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.	Records	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records ...	(57)	(55)	(56)	(54)	(24)	(23)	(57)	(57)	(7)	Number of Records ...	(29)	(29)	(29)	(28)	(19)	(13)	(28)	(29)	(11)
Average ...	30	22	14	29	15	12	31	36	3	Average ...	9	13	12	12	11	3	9	9	7
Over ...	21	3	6	9	4	7	13	11	1	Over ...	14	4	10	7	7	2	15	15	1
Under ...	6	30	36	16	5	4	13	10	3	Under ...	6	12	7	9	1	7	1	5	3
ENGLAND.										CHANNEL ISLANDS.									
Number of Records ...	(223)	(222)	(221)	(211)	(168)	(160)	(223)	(220)	(133)	Number of Records ...	(2)	(2)	(2)	(2)	(2)	(1)	(2)	(2)	—
Average ...	129	119	74	104	95	37	125	98	73	Average ...	1	—	—	—	—	—	1	1	—
Over ...	58	33	22	33	23	4	76	29	17	Over ...	—	—	—	—	—	—	—	—	—
Under ...	36	70	127	73	50	119	22	93	43	Under ...	1	2	2	2	2	1	1	1	—
WALES.										ISLE OF MAN.									
Number of Records ...	(14)	(14)	(14)	(13)	(19)	(5)	(14)	(14)	(7)	Number of Records ...	(1)	(1)	(1)	(1)	—	—	(1)	(1)	—
Average ...	8	6	6	6	3	3	5	3	6	Average ...	—	1	—	1	—	—	—	—	—
Over ...	4	—	3	2	4	—	9	6	—	Over ...	1	—	—	—	—	—	1	1	—
Under ...	2	5	5	5	3	2	—	5	1	Under ...	—	—	1	—	—	—	—	—	—
GRAND SUMMARY, 1915.										SUMMARY OF 1914 FOR COMPARISON.									
Number of Records ...	(326)	(323)	(323)	(309)	(223)	(202)	(325)	(323)	(158)	Number of Records ...	(297)	(293)	(292)	(285)	(204)	(187)	(302)	(295)	(170)
Average ...	176	141	104	152	124	55	171	147	89	Average ...	118	149	107	143	100	82	145	129	86
Over ...	99	40	41	104	38	14	117	62	19	Over ...	64	94	96	102	70	49	141	116	29
Under ...	51	122	178	53	61	133	37	114	50	Under ...	115	50	89	40	34	56	16	50	55



FIG. 20.—MEMBERS OF THE NATIONAL SWEET PEA SOCIETY AT MESSRS. DOBBIE'S NURSERY, MARKS TEX.

(See p. 57.)

also widely known as chairman of the Managing Committee of the Lancaster Agricultural Society, assisted by Mr. SEDMAN, who has been gardener here for nearly 32 years. Mr. H. ROLT acted as steward at the Rose garden, and Mr. GARNETT explained the features of the herbaceous and Rose gardens. Over a thousand Carnations of different varieties will make a fine show later, whilst the Vines, Peaches, Nectarines, Melon and Tomato houses and fernery excited much interest, also the extensive collection of fruit trees.

WAR ITEMS.—We regret to state that further casualties amongst French horticulturists are reported. A son of M. HENRI MARTINET, editor-in-chief of *Le Jardin*, is reported as missing after an engagement at Neuville St. Vaast. M. MARCEL BOISSIERE, of the *Moniteur de l'Horticulture*, has been killed. M. GEORGES MARTIN-LECOINTE, one of the secretaries of the National Horticultural Society of France, is reported wounded. M. GABRIEL DEBRIE, the well-known Parisian florist, of the Rue Royale (Maison Lachaume), has lost his son in the trenches at Souchez. Other names less familiar to our English readers also appear in the recent lists of casualties. Twenty-two old boys belonging to the Versailles School of Horticulture have laid down their lives on the field of battle.

—The death of Mr. H. J. MARTIN occurred in Germany on May 26. Deceased went to Germany eighteen months before the commencement of the war as gardener to PRINCE FREDERICK LEOPOLD OF PRUSSIA at Klein Gleinicke, Potsdam. Later he was interned at Ruhleben, where he contracted influenza and developed kidney and lung trouble. He was permitted after some months to leave the prison for a sanatorium, and his wife was allowed to be with him for the last four days. Before going to Germany deceased was head gardener at Warren Wood, Hatfield, and previous to that was gardener for eleven years at Stoneleigh Abbey, Kenilworth. An account of his excellent work at Stoneleigh Abbey was printed in the *Gardeners' Chronicle*, October 28, 1896, p. 326. He leaves a boy and girl.

—It is with regret that we record the death of Private A. MITCHELL, on the 24th ult. The deceased was assisting in trench digging at the front, when he was struck by a bullet. Deceased was only 18 years of age. He commenced work in Sherborne Gardens, and afterwards was employed at Captain BRASSEY'S, Cottesbrooke, Northampton. He enlisted in the 5th Northampton Regiment at the outset of the war, and went to the front on June 4. A letter has been received by Mr. and Mrs. MITCHELL from deceased's commander testifying to his devotion to duty.

—Gunner JOHN MCQUARRIE, of the Argyll Mountain Battery, has been wounded at the Dardanelles. Prior to the war he was a gardener at Aros Castle, Tobermory.

—Private WILLIAM IRVINE DYCE, 5th Royal Scots, was killed at the Dardanelles on June 18. He was eighteen years of age, and before enlisting was in the employment of Mr. JOHN DOWNIE, Edinburgh.

TRADING WITH THE ENEMY.—Christian Ruge Jensen, a Dane, carrying on business in the City of London, has been charged with trading with the enemy. The case related to 300 boxes of Apricots and 50 cases of desiccated Coconut, which it was alleged were destined for Paul Hermann, a grocer at Hamburg. The defendant was committed for trial.

THE CORN CROPS.—Forecasts of the crops of 1915 give the following estimates:—In Italy, Wheat, 102,358,000 cwt.; and in the United States, Wheat 515,906,000 cwt., Barley 89,142,000 cwt., Oats 399,719,000 cwt., Maize 1,407,003,000 cwt., and Rice 12,054,000 cwt.

COMMITTEE ON LAND SETTLEMENT FOR SAILORS AND SOLDIERS.—The President of the Board of Agriculture and Fisheries has appointed a departmental committee to consider and report what steps can be taken to promote the settlement or employment on the land in England and Wales of sailors and soldiers, whether disabled or otherwise, on discharge from the Navy or Army. The committee will be constituted as follows:—Sir HARRY VERNEY, Bart., M.P. (chairman), the EARL OF NORTHBROOK, the Right Hon. HENRY HOBHOUSE, Major-General Sir CHARLES CRUTCHLEY, K.C.V.O., Mr. SYDNEY MAGER, Mr. VAUGHAN NASH, C.V.O., C.B., Mr. F. H. PADWICK, Mr. G. H. ROBERTS, M.P., Mr. LESLIE SCOTT, K.C., M.P. The secretary of the committee will be Mr. F. L. C. FLOOD, assistant secretary of the Board of Agriculture and Fisheries, to whom all communications should be sent at 4, Whitehall Place, S.W.

CHURCH ARMY "CITY GARDENS."—The annual distribution of prizes to successful plot-holders of the Church Army "City Gardens" took place on Saturday last, the 17th inst. One of the gardens in Elverton Street, Westminster (at the rear of the Royal Horticultural Hall), was chosen for the ceremony, but the rain necessitated holding it at the Church Army Labour Yard in Artillery Row. Mr. W. Paynter, Chairman of the City Gardens Department, presided,

necessary milkers (until either women, or men not of recruitable age, can be trained to take their place, or other means can be provided to replace them) should not be induced to enlist. (b) Sufficient engine drivers, blacksmiths, and thatchers should be left, as far as possible, in every district. 2. Instructions have been given to pension officers not to raise questions in the case of existing old age pensioners in respect of any temporary increase of means due to the pensioners' re-employment on account of shortage of labour arising out of and during the war, provided that there is no evidence of a desire to pay, on account of the pension, less than the proper rates of wages. 3. Postmen who desire to work in the harvest and who are offered employment by farmers will be granted a period of special leave for that purpose.

FRIENDS IN DEED.—At the meeting on June 16 of the French Academy of Agriculture, an account was given by Baron d'ANCHALD of the work done by the members of the Society of Friends in London in restoring those districts of France which, ravaged by the enemy, have been reconquered by the French. The first work of the delegates sent by the Society of Friends consisted in providing lodging, food, and clothes for the victims of the Teutons' pillage. They next turned their attention to the needs of the farmers for seeds, tools, implements, and cattle. The Society undertook the distribution of



FIG. 18.—*BULBOPHYLLUM BALFOURIANUM*, SP. N.

(See Awards by the Orchid Committee.)

and briefly reviewed the successful progress of this venture, started in 1909, mentioning that the Society intended to open up another garden at Hammersmith. The Hon. Secretary, Mr. H. T. Bennett, read a report on the gardens, which Mr. Basil Holmes, of the Public Gardens' Association, had drawn up. This contained an account of the best plots at the eight gardens:—Three in Westminster, two in Walworth, and one each in Brixton, Kensington, and Regent's Park district, having a total of 85 plots. Victoria Lady Templemore presented Certificates to the winners or their relations—for eighteen of the men were at the front.

AGRICULTURAL LABOUR.—The President of the Board of Agriculture and Fisheries desires to draw the attention of farmers to the following arrangements that have been made by the Government Departments concerned to relieve the existing shortage in agricultural labour. 1. Instructions have been issued to general officers commanding in chief and to officers commanding district that: (a) When there is no one over recruitable age available, a working farm bailiff or foreman, a head carter, horseman, and second horseman in the case of a large farm, or waggoner, a head stockman or yardman, a shepherd, and

vegetable seeds in the whole of the Department of the Marne, and, in fact, of that of the Meuse. Several thousand pounds of seed Potatoes, and 1,700 packets of seeds of 14 different kinds of vegetables were distributed. The experience gained by the Society of Friends should prove of great service to the R.H.S. when the time comes to set about the work of restoring the horticultural industries throughout the invaded countries.

FLOWERS IN SEASON.—A fine bunch of creamy-white single Roses from Messrs. VERRICH AND SON, Exeter, brings into the office the peculiar but pleasant fragrance of *Rosa Souliana*, a Chinese species not at present common in gardens. It grows very strongly, 12 feet or more in height, and its branches are excessively spiny. The flowers in the large clusters open in succession rather than making a great display, and each flower sets a pretty, orange-coloured fruit.

RASPBERRIES IN SCOTLAND.—The first consignment of Raspberries from the Blairgowrie district was dispatched on July 13. The crop is generally a poor one, owing to frosts. In the Auchterarder district the Raspberries are rather later, and an average crop is anticipated. Here about 700 acres are under Raspberries.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XXXVII).

RECONSTITUTION DE L'AGRICULTURE EN BELGIQUE.

Nous avons tenu nos lecteurs au courant des efforts mis en œuvre dès à présent pour que l'activité agricole et horticole de la Belgique puisse reprendre sans retard dès que le pays aura été évacué par l'ennemi. De nombreux organismes s'efforcent de réunir les fonds et le matériel nécessaires aux exploitants des établissements détruits ou pillés. En vue de donner à ces efforts l'unité nécessaire, divers groupements se sont réunis sous l'égide de la Royal Agricultural Society.

Dans le domaine horticole, l'appel de la Royal Horticultural Society a reçu l'accueil que l'on sait de la part des professionnels et amateurs horticoles et cette société fait de louables efforts en vue d'augmenter l'importance des fonds recueillis.

M. Helleputte, Ministre de l'Agriculture de Belgique, qui se trouvait récemment en Angleterre pour y traiter diverses questions relatives à son département, a, au cours d'une réunion avec des personnalités agricoles et horticoles belges, exprimé son intention de constituer à bref délai un comité chargé de servir d'intermédiaire entre les associations qui s'occupent du relèvement agricole de la Belgique et son département, notamment en vue de fournir des renseignements sur les besoins de la Belgique et sur les conditions d'utilisation des dons reçus. Nous y reviendrons dès que la composition du comité sera connue.

Or nous signalons que M. Helleputte, qui n'est pas un inconnu pour les horticulteurs anglais habitués des manifestations horticoles belges, se préoccupe vivement de la situation actuelle et de l'avenir de l'horticulture belge.

LES JARDINS DE LA VILLE DE LILLE.

La grande ville industrielle du nord de la France, Lille—qui depuis de longs mois subit les horreurs de l'invasion allemande—possède quelques beaux parcs et promenades publiques.

Les renseignements suivants sont extraits d'une brochure* de M. Saint-Léger qui fut, pendant 23 ans, directeur des plantations de la ville (jusqu'à sa mort en 1912) et à qui l'horticulture lilloise est redevable de beaucoup d'améliorations.

Les promenades et les jardins de la ville datent de sa transformation en 1860, consécutive à l'extension de l'enceinte fortifiée. Barillet-Deschamps, alors jardinier en chef de Paris, fut chargé d'établir un projet; mais ce projet, jugé trop vaste pour l'époque, fut finalement rejeté. On se contenta alors d'un ensemble plus modeste auquel des améliorations successives furent apportées.

Les promenades et jardins occupent actuellement une étendue de 35 hectares. Le "Jardin Vauban" d'une surface de 3 hectares et demi, d'un beau style paysager, est la plus belle de ces promenades et le rendez-vous préféré des Lillois.

Il faut ensuite citer les très beaux squares Daubenton, Ramponneau et Faidherbe; et surtout le jardin et le palais Rameau qui sont dus à la libéralité de Ch. Rameau, grand amateur d'horticulture, qui légua en 1875 une somme de 400,000 francs pour l'érection de locaux nécessaires à une société d'horticulture et l'établissement d'un parc. Ces volontés ont été scrupuleusement exécutées. Les bâtiments com-

prennent une très belle salle d'exposition sous forme d'un grand hall en partie vitré, les salles du rez-de-chaussée et du premier étage occupées par la Société d'Horticulture et enfin une grande serre avec de beaux spécimens de Palmiers.

Le jardin "de la Citadelle" d'une étendue de 6 hectares, connu aussi sous le nom de "Bois de Boulogne," a été créé en 1865; le jardin-école d'arboriculture remonte à 1868 et a été spécialement aménagé en vue de l'enseignement de l'arboriculture fruitière.

Enfin le jardin botanique actuel a, pour ancêtres, le jardin médical créé en 1644 par Pierre Ricard, célèbre médecin lillois et botaniste et le jardin botanique de Cointrel, également médecin et professeur, fondé en 1748.

En l'an VII. de la première République, le jardin botanique de Lille était sous la direction de J. B. Lestiboudois; il possède maintenant une étendue de deux hectares et a été transféré à son emplacement actuel en 1878. Il renferme beaucoup de plantes de serres. Saint-Léger citait, dans sa brochure, un très bel exemplaire de *Stangeria paradoxa*, espèce de Cycadée du Natal qu'on voit rarement en culture—et aussi une importante collection de plantes aquatiques.

Lille possède également de très jolis boulevards et de belles plantations d'alignement. Les "allées de l'Esplanade" sont plantées de vieux Tilleuls antérieurs à 1749 et de Marronniers datant de 1756; ces arbres auraient été "restaurés" en 1860 selon les indications de Barillet-Deschamps.

Le total des crédits affectés au service des jardins et plantations de la ville de Lille atteignait en 1909 la somme de 132,975 francs. La décoration florale nécessitait l'emploi de 65,000 plantes. A. M.

NOUVELLES DIVERSES.

NOUVELLES DE LA GUERRE.—M. Foëx, Etienne Edmond, directeur adjoint de la station de Pathologie végétale de Paris, est blessé et prisonnier. M. Martin, Georges, secrétaire de la Société Nationale d'Horticulture de France, est blessé.

LE COMMERCE HORTICOLE À BRUXELLES.—

La Halle des Producteurs, la coopérative de vente des horticulteurs belges, vient de publier son bilan pour l'exercice 1914-1915. Le bénéfice qui était de 114,000 francs l'année précédente est tombé à 33,000 francs, bien que les frais généraux aient été réduits dans une forte proportion. Après le prélèvement des primes aux acheteurs, il ne restera guère de ristourne pour les membres qui en temps normal touchent 2.5 à 3 pour cent sur le montant des ventes faites pour leur compte.

LE COMMERCE HORTICOLE DANS LE MIDI.—

On se rappelle les inquiétudes qui régnaient le long de la Méditerranée au sujet de l'incertitude des transports qui compromettrait l'activité commerciale des producteurs de fleurs. La *Petite Revue agricole et horticole* donne actuellement une note rassurante. Des cultures ont été abandonnées au début de la guerre parce qu'on s'imaginait que les fleurs, produits de luxe, perdraient toute valeur. Certains producteurs cependant ont soigné leurs plantes et leur travail a été largement rétribué. Les prix n'étaient pas très élevés au début de la saison d'expédition, mais ils se sont relevés insensiblement pour atteindre leur maximum vers les fêtes de la Noël et du jour de l'an. Les Oeillets, les Anémones et les Roses ont fait alors des cours très

rémunérateurs. A cette époque les producteurs, complètement rassurés, ont utilisé tous leurs châssis qui ont rendu disponibles à la fin de l'hiver des quantités de fleurs dont l'expédition a été régulière et les prix satisfaisants, malgré la fermeture des débouchés étrangers.

LE SERVICE HORTICOLE EN BELGIQUE.—

M. De Meyer, conseiller d'horticulture de l'Etat belge pour la province d'Anvers et la partie Est de la Flandre Orientale, se trouve actuellement à la disposition de son gouvernement en Hollande. En son absence, sa circonscription a été confiée à ses collègues de Vilvorde et de Gand. Ceux-ci ont notamment organisé des conférences sur l'utilisation des fruits et légumes de même que sur les cultures à rendement rapide à préconiser pour remédier à la pénurie des vivres.

L'UTILISATION DES FRUITS TOMBÉS EN ALLEMAGNE.—

Suivant la *Vossische Zeitung*, il se gâte annuellement en Allemagne pour plus de 20 millions de marks de fruits qui peuvent parfaitement être utilisés. Les fruits tombés, qui, même lorsqu'ils ont atteint leur complet développement, ne sont souvent pas recueillis, constituent un excellent aliment pour les cochons. Ils peuvent aussi, après cuisson et sucrage, être utilisés sous forme de compotes.

OÏDIUM AMÉRICAIN DU GROSEILLIER.—

Suivant une communication du Conseil horticole néerlandais, une personnalité qui désire garder l'anonymat décernera une prime de 5,000 florins à celui qui découvrira un moyen efficace pour combattre l'oïdium américain du Groseillier à maquereau. Cette offre est faite à la suite des résultats peu favorables donnés par les essais de fongicides qui ont récemment eu lieu tant en Angleterre qu'en Hollande.

LE MARCHÉ HORTICOLE EN HOLLANDE.—

Les apports de Pommes de terre hâtives ont été très abondants au cours de la semaine écoulée. A Grootebroek ils se sont élevés à 55,000 hectolitres. Les prix ont néanmoins manifesté une tendance à la hausse, le produit ordinaire valant 14 à 18 francs. A ces prix les opérations de la récolte sont poussées avec vigueur. Tous les légumes donnent des prix rémunérateurs. Il en est de même des fruits mous, les Groseilles poires ayant couramment fait 60 fr.

KORT OVERZICHT VOOR DE VLAMINGEN.

TJEDENS eene reis in Engeland, gaf M. Helleputte, belgisch Minister van Landbouw, zijn inzicht te kennen een komiteit te stichten dat aan de engelsche verenigingen die zich met het herstellen van den Landbouw in België bezig houden, de noodige inlichtingen zou geven. Zoodra verdere bijzonderheden voorhanden zijn komen wij er op terug.

In het bezette gedeelte van België is de Tuinbouwdienst aan't werk. De ruwe winst der samenwerkende maatschappij van Bloem-Fruit-en groentekwekers te Brussel is gevallen van 114,000 fr. op 33,000 fr.

In't Zuiden van Frankrijk heeft de bedrijvigheid der bloemkwekers hernomen. De handel is er niet slecht geweest alhoewel men groote vrees koesterde.

In Holland hebben 't de markten zeer druk dank aan de vraag voor den uitvoer. De groentekwekers maken loonende prijzen. Er is daar ook een prijs van 5,000 gulden uitge-loofd voor hem die een afdoende middel zal vinden ter bestrijding van den amerikaanschen kruisbessen-meeldauw.

* Saint-Léger—Lille et la région du Nord en 1909. Congrès de l'Association pour l'avancement des Sciences, Lille, 1909.

HOME CORRESPONDENCE.

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

STRANGE BRAMBLES AND ROSES IN AN ORCHARD.—On several Apple trees in a picturesque old orchard on the slope of Mendip, just at the foot of Burrington Combe, Somerset, are some extraordinary growths of Bramble (*Rubus rusticus*?) and *Rosa arvensis*, the common white Rose, which flowers three weeks later than the ordinary Dog Rose. One Apple tree, about 35 feet high, has Brambles almost to the top, and my attention was drawn to it by the numerous aerial shoots hanging vertically almost to the ground. These are tough, but extremely slender, with upturned prickles, but no leaves except above, although alive to their tips in most cases. They are partly covered with a distinct bloom, like those of several other kinds of Bramble. One vertical shoot was 16 feet long, when broken off a few feet from its top. Another, which springs from the base of the Apple tree, is about 30 feet long, branched and curving. Below are Bracken, Primroses, and Nettles. Another Apple tree is thickly covered with Ivy, and it has similar but less long, hanging Brambles. A third tree is covered with Brambles and *Rosa arvensis*, one Rose-shoot being at least 32 feet long, branched, and curiously knotted at some of the joints, and ending in leafy, flowering shoots 10 feet long, falling to the ground, and with numerous flower buds. One of the Rose canes is $\frac{3}{4}$ inch thick for the first 10 feet above ground. A Hazel, between the two first-mentioned Apples, is also covered with Brambles 20 feet high. These trees are separated from the open moorland above by a rocky bank, and thick hedge of Hazel, Brambles and Dogwood. Although neglected orchards, chiefly of cider Apples, are nothing new in Somerset, in these days such scenes are sad, except in the eyes of the botanist and the artist. *H. S. Thompson.*

THE CUCKOO SPIT OR FROG HOPPER.—Judging by its behaviour in my small garden in Surrey it is difficult to understand the light and airy fashion in which this terrible pest is so often referred to. In *The Book of Garden Pests* I do not see mention of it at all, yet here I look upon it as a nuisance equal to all the others put together. Every spring they make their appearance in thousands, but I think this year they are even worse than ever. Very few plants are proof against their attacks, though up to the present they have not interfered with Potatoes, while Delphiniums seem distasteful to them. The under sides of the leaves of Rhubarb were last year infested with them. A great many vegetables are dotted over with that froth-like substance, which contains one or more insects, while nearly all border flowers are infested with them. The worst troubled are, I think, Pinks, Lavender and Southernwood. Most hardy shrubs are attacked, Privet hedges especially, while a fine specimen of *Escallonia langleyensis*, which serves to screen a fence, seems just to conform to their requirements. We are sometimes told to use a brush dipped in methylated spirit in order to get rid of them, but even in a small garden this is not practical. Paraffin emulsion, nicotine and quassia have been used with only partial results. They are so protected by the froth with which they are surrounded that it is extremely difficult to get at them. Then the fact remains that even if the plants are cleared fresh supplies make their appearance from neighbouring gardens, hedges, and, in the event of waste land, from the weeds which are often smothered with them. Certainly no half-hearted measures of brushing them off will be of any service, and attempts to clear them away by spraying with insecticides is often so disheartening that one is sometimes inclined to give the garden up to them. *W. T.*

ANTIRRHINUMS FOR SUMMER BEDDING.—I have heard varied expressions of opinion lately as to the advisability of making a sowing of Antirrhinums now, for raising bedding plants for next summer. Many gardeners seem to favour the view that summer or autumn sowing is preferable to sowing in spring. For myself I strongly favour the seeds being sown in February for summer bedding, as I find that plants raised at that season can be relied upon to provide a brilliant display of flower from about the third week in June to the beginning

of October. I don't think the same can be said of the plants raised in autumn, as I have observed that if they are earlier flowering they begin to lose their brilliance in July. The subject is worth consideration, as Antirrhinums are increasing in popularity. They are unrivalled especially for long borders. We have a border here about 150 yards long, which is at present a brilliant ribbon of colour. The varieties used are Sutton's Cloth of Gold and tall Orange King for a background and Pure White, Apricot Bonfire and Yellow Prince in the foreground. *F. W. Miles, Ware Park Gardens, Ware, Herts.*

AMERICAN POND WEED.—I notice in *The Field*, July 17, p. 135, a repetition of the story that the introduction of *Elodea canadensis* was due to the carelessness of a Cambridge professor of botany. It would be interesting to know what is the authority for this statement. The first recorded appearance of this aquatic in the British Isles was in a pond at Waringstown, Co. Down, in 1836; and the suggestion has been made that it was imported with squared timber from Canada into Belfast (*Cybele Hibernica*, 2nd Ed., p. 333). Hooker's *Students' Flora*, p. 371, says that it was introduced into England about 1841; but Mr. A. O. Walker stated at the Linnean Society on November 2, 1911, that its first appearance in Great Britain was in Berwickshire in 1845, and that by 1850 it had become abundant in many parts of the British Isles. It has generally been looked on as an unmitigated nuisance, but Sir Herbert Maxwell, in the *Scottish Naturalist*, April, 1915, refers to it "as a beautiful weed, which in ordinary seasons forms a close green carpet over the bottom of a lake or stream, but at long intervals of years rushes into rampant growth so as completely to fill considerable sheets of water." In such exceptional seasons it interferes with boating, bathing, and fishing; but as it is highly nutritious, it attracts to some lakes enormous quantities of wild fowl, especially surface-feeding ducks. Cattle are very fond of it, and may be seen browsing on it when it grows in accessible streams. *H.*

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 20.—The usual fortnightly meeting was held on Tuesday last, in the Vincent Square Hall, Westminster. The exhibition showed a marked falling off in comparison with recent shows, as is usual after the summer exhibition at Holland House. Several prominent exhibits were staged in the Fruit and Vegetable Section, the Gold Medal being awarded for an exhibit of Gooseberries, and the Silver-gilt Knightian Medal for a splendid collection of vegetables. We learn from the exhibitor that this fine exhibit of kitchen garden produce was a response to our suggestion that vegetables and salads should be exhibited more frequently. We congratulate Mr. STREETER, not only on his skill as a cultivator and the excellent manner in which his collection was arranged, but on being the first to respond to our appeal.

The Fruit and Vegetable Committee recommended three Awards of Merit, two for varieties of Gooseberries and the other for Cherry Waterloo, all well-known sorts, and extensively cultivated.

The Floral Committee recommended three Awards of Merit to novelties, and awarded eighteen medals to collections, the principal groups consisting of Fuchsias, Roses, Carnations, and hardy flowers, including collections of Border Phloxes.

The Orchid Committee recommended an Award of Merit to a new species of *Bulbophyllum*, and two Silver Flora and two Silver Banksian Medals for collections.

At the three o'clock meeting in the Lecture Room, Mr. GEORGE FORREST delivered an address on "Chinese Plants," illustrated by photographs of the plants growing wild in China.

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. John Green, W. J. Bean, F. W. Harvey, G. Reuthe, Geo. Harrow, J. W. Moor-

man, Wm. Howe, J. F. McLeod, C. Dixon, C. R. Fielder, H. J. Jones, Chas. E. Shea, J. T. Bennett-Poë, C. E. Pearson, W. P. Thomson, E. H. Jenkins, J. Jennings and R. C. Nutcutt.

AWARDS OF MERIT.

Pelargonium Kathleen Bunyard.—An Ivy-leaved variety with rosy-scarlet flowers. The plants were growing in 6-inch pots, and were of compact, bushy habit and very floriferous. Shown by Mr. A. E. BILLINGHURST, West Croydon.

Campanula Meteor.—A seedling from Norman Grove variety, much resembling White Star, but rather flatter and with a flush of blue in the white petals. The blooms measured $1\frac{1}{4}$ inch in diameter and were borne on stems 9 inches to 1 foot high. Shown by Messrs. THOS. B. GROVE AND SONS, Sutton Coldfield.

Campanula acutangula.—This small-growing species is a native of Spain, where it grows wild on limestone at an altitude of 6,000-7,000 feet. It belongs to the section represented by *C. Portenschlagiana*. The leaves are reniform and very small. The numerous flowering stems bear bell-shaped blooms about $\frac{1}{2}$ inch across and of a lavender colour shaded with purple. Shown by Mr. MAURICE PRICHARD.

OTHER NOVELTIES.

Miss WILLMOTT exhibited the true form of *Plagianthus Lyallii*, which differs from the form in general cultivation by its upright habit of growth. Miss WILLMOTT also exhibited *Anigozanthos coccinea*. The plant has linear foliage $2\frac{1}{2}$ feet long and $\frac{1}{2}$ inch broad. The panicles are forked, and in the specimens exhibited were about 4 feet high. The tubular flowers are swollen at the base and bear reddish-scarlet hairs, which furnish the colouring, the corolla itself being greenish, like *A. flavidus*, of which *Index Kewensis* gives *A. coccinea* as a synonym.

Messrs. PAUL AND SON, Cheshunt, showed a miniature *Polyantha* Rose with silver variegated foliage and tiny rose-pink blooms. The variegation is very pronounced and the plants appeared to possess a value for edgings to Rose beds. The plants were only 6 inches high.

GENERAL EXHIBITS.

The following Awards were made for collections:—*Silver-gilt Flora Medals* to Col. the Right Hon. MARK LOCKWOOD, M.P., Bishops Hall, Romford (gr. Mr. G. Craddock), for a large group of *Trachelium coeruleum* and its white variety; and, as a table exhibit, a comprehensive collection of Fuchsias in pots; and Messrs. H. J. JONES, LTD., Ryecroft Nurseries, Hither Green, Lewisham, for varieties of border Phloxes. This latter exhibit was staged on two long tables, and contributed the finest colour display in the hall. Of the varieties the more notable were *La Mahdi* (violet-blue), *Iris* (of the same tone, but with a deeper centre), *Europe* (white, with carmine-coloured eye), *Mme. Paul Dutrie* (pale pink), *Widar* (heliotrope, with white eye), *Elizabeth Campbell* (pale salmon-pink), *Meteor* (pink) and *G. A. Stroheim* (orange-scarlet). *Silver Flora Medals* to Messrs. B. R. CANT AND SONS, Colchester, for Roses; Mr. JAMES DOUGLAS, Edenside, Great Bookham, for border Carnations, outstanding varieties being *Bookham Clove*, *Mrs. G. A. Reynolds* (buff ground with orange-coloured stripes), *Mrs. Andrew Brotherton* (fancy, the white ground being streaked and pencilled with mulberry-colour), *Ilene* (white) and *Salmonea* (clear pink); Mr. AMOS PERRY, Enfield, for hardy flowers. This excellent collection of choice hardy subjects was arranged as a floor group and included a bank of Lilies, of which *Lilium parviflorum*, *L. dalmaticum*, *L. pardalinum* and *L. canadensis rubrum* were uncommonly good. Varieties of hardy Nymphaeas were also included. *Silver Banksian Medals* to Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering Carnations; their novelty Bishton Wonder possesses a beautiful perfume; Messrs. H. B. MAY AND SONS, Edmonton, for standards of varieties of *Fuchsia fulgens*, *Hydrangeas*, *Richardia Elliottiana*, tall Lantanas and a collection of *Begonia Rex*, the flowers being set off by Ferns and Palms; Mr. G. W. MILLER, Wisbech, for hardy flowers, in-

cluding *Ornithogalum lacteum*, which he grows so well; Rev. J. H. PEMBERTON, Havering-atte-Bower, Essex, for seedling Roses. Messrs. WATERER, SONS, and CRISP, LTD., Twyford, for hardy flowers such as *Helenium pumilum magnificum*, *Catanache bicolor*, *Verbascum olympicum* and a selection of the choicer Phloxes. *Bronze Flora Medals* to Mr. JAMES BOX, Lindfield, for a large bank of Phloxes, set off by a group of Lilies in the centre and corner-pieces of *Alstroemeria lutea*; Messrs. G. BUNYARD AND CO., LTD., Maidstone, for hardy flowers; Mr. M. PRICHARD, Christchurch, Hampshire, for hardy flowers, the gem of the collection being the white form of *Crinum Powellii*. *Bronze Banksian Medals* to Messrs. J. CHEAL AND SONS, Crawley; Mr. C. ELLIOTT, Stevenage; Mr. G. REUTHE, Keston, Kent; Messrs. T. S. WARE, LTD., Feltham; and Messrs. W. WELLS, jun., Merstham, all of whom exhibited hardy flowers.

Orchid Committee.

Present: Sir Harry J. Veitch (in the chair), and Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, W. H. White, A. Dye, W. H. Hatcher, C. H. Curtis, J. Charlesworth, Pantia Ralli, J. Wilson Potter, S. W. Flory and R. A. Rolfe.

AWARDS RECOMMENDED.

AWARD OF MERIT.

Bulbophyllum Balfourianum n. sp. (see fig. 18), from Messrs. SANDER AND SONS, St. Albans. This is a very remarkable species in every respect, and especially in its being almost identical in growth with the singular *B. Fletcherianum* described and illustrated in the *Gardeners' Chronicle*, May 9, 1914, p. 321, and in having the same texture and colour in the flowers, which are, however, markedly different in form. The glaucous pseudo-bulbs, an inch or so in length, have a greyish appearance and a granulated surface. The fleshy, lanceolate leaves are from 6 to 8 inches long, and 2 inches in width. The inflorescence is a short raceme, borne close to the pseudo-bulb, and in this case bearing three flowers. The sepals are $1\frac{1}{2}$ inch long, and about 1 inch wide, the lateral two being curved and approached, connate for part of their length, but with the tips free and diverging. The ground colour is creamy-white, the markings, which are whole-coloured at the base and in spotting outward, reddish-claret colour, the hinged lip being of the same tint. Its affinity is *B. Fletcherianum*, the most prominent differences being that in that species the flowers are proportionately narrower, and the sepals, and especially the lateral segments, much more elongated. The flower has a resemblance to *Stapelia*, and its odour also is similar. It is said to have been imported from New Guinea.

GENERAL EXHIBITS.

MESSRS. SANDER AND SONS, St. Albans, were awarded a Silver Flora Medal for an interesting group, with *Coelogyne Dayana*, bearing many pendulous racemes in the centre; two light yellow forms of *Anguloa Cliftonii*, *Coelogyne Mooreana*, various showy *Odontoglossums*, *Androbium regium*, *D. sanguinolentum* and some rare species of botanical interest, one specimen of *Xylobium* having an inflorescence 4 feet in height.

MESSRS. STUART LOW AND CO., Jarvisbrook, Sussex, were awarded a Silver Flora Medal for a group in which were noted the pure-white *Aërides odoratum album*.

MESSRS. J. AND A. McBEAN, Cooksbridge, secured a Silver Banksian Medal for a group in which their fine strain of scarlet *Odontoglossum* was effective.

J. GURNEY FOWLER, Esq., Prackenhurst, Pembury (gr. Mr. J. Davis), sent *Cymbidium aloifolium* variety, with two arching spikes of yellowish flowers with dark-red stripes on the petals.

MESSRS. E. H. DAVIDSON AND CO., Orchid-dene, Twyford, sent the very rare *Cattleya superba alba*, a blush-white form which received a First-class Certificate June 11, 1895, but has seldom appeared since. Also a very fine form of *Odontoglossum Ceres*.

MESSRS. FLORY AND BLACK, Orchid Nursery, Slough, showed their new *Odontoglossum Milan* (Rolfeae $\times$ Harryanum), an improvement on *O. Rolfeae* and with larger flowers. The sepals have a slight greenish tint, the petals white, both prettily marked with chocolate-purple.

MISS VIOLET B. FELLOWS, Shotesham Park, Norwich, sent the singular *Liparis plantaginea*, an uncommon Himalayan species, with erect spikes of flowers, the conspicuous feature in which is the broadly ovate emerald-green labellum.

Fruit and Vegetable Committee.

Present: Mr. Owen Thomas (in the chair), Messrs. W. Bates, Edwin Beckett, W. Pope, H. Markham, H. J. Wright, A. Bullock, P. D.

smooth-skinned variety of excellent flavour. All shown by Messrs. GEO. BUNYARD AND CO., LTD.

GROUPS.

The following Awards were made for collections:—*Gold Medal* to Mr. J. C. ALLGROVE, Middle Green, Langley, Slough, for a collection of Gooseberries and Currants. The exhibit filled the whole of a table 48 feet long, and comprised 100 varieties of Gooseberries and about 12 varieties of Currants. The feature of the exhibit was a number of single, double and triple cordons, also palmate and standard Gooseberries, these being crowded with fine fruits. The fruits exhibited in baskets were superb, and included (*dessert*) Langley Gage (the best-flavoured Gooseberry), Langley Beauty, Golden



FIG. 19.—GOOSEBERRY WHINHAM'S INDUSTRY.
(See Awards by the Fruit and Vegetable Committee.)

Tucker, E. A. Bunyard, A. Grubb and A. R. Allan.

AWARDS OF MERIT.

Cherry Waterloo.—This excellent black Cherry is well known in gardens; it was raised more than one hundred years ago by Thomas Andrew Knight, who gathered the first fruits a few weeks after the battle of Waterloo. The tree is a good cropper, and grows freely; its fruits are of excellent quality, and generally the variety is one of the best black Cherries in cultivation.

Gooseberry Whinham's Industry (see fig. 19).—One of the best red Gooseberries and extensively cultivated by market growers for its prolific cropping.

Gooseberry Roseberry.—A small, green,

Gen. Whitesmith, Early Green Hairy, Early Sulphur, Warrington, Ironmonger, Pitmaston Greengage; (*culinary*) Trumpeter, Broom Girl, Surprise, Whinham's Industry, Keepsake, Leveller and Coiner. Currants trained to single stems bore fruits in profusion.

Silver-gilt Knightian Medal to Misses TATE AND TANNER, Caldecote Towers, Bushy Park (gr. Mr. F. Streeter), for a collection of vegetables. The exhibit was arranged on a special stand, painted white, the subjects being grouped on circular stands and on shelving at the back, after the modern method of exhibiting vegetables. The more important subjects were Potatoes May Queen, King Edward VII. and Early Ashleaf, Tomato Duke of York, Earliest Purple Kohl Rabi, Cucumber Lockie's Perfection, Lettuce All-the-Year-Round, Onion

Autumn Giant, Carrots Red Elephant and Long Forcing, Peas Quite Content, International, Duke of Albany and Perfection, Round Beet, Marrow Moore's Cream and Seakale Beet.

Silver Banksian Medal to Messrs. DOBBIE AND Co., Edinburgh, for a collection of Peas, comprising 40 varieties. The following sorts were amongst the best:—Superb, Gradus, Alderman, Gladstone, Laxtonian, Stratagem, Duke of Albany and Ne Plus Ultra.

Mr. S. MORTIMER, Knowledge, Farnham, again exhibited his new Tomato Tip-Top. A stem was shown with six large trusses, one of the bunches comprising 20 fruits, weighing in all about 4lb.

Messrs. LAXTON BROS., Bedford, showed a small seedling Plum raised from Early Orleans x Fraser's Early Yellow. The fruits were not ripe, but the colour is apparently yellow flushed with red.

NATIONAL SWEET PEA.

JULY 14.—The annual outing of the National Sweet Pea Society was referred to briefly in the last issue, and we now publish fuller particulars. The first part of the programme—the inspection of the society's trials at Boyton Hall, Roxwell, Essex, was attended by about seventy, most of whom journeyed from London by rail. Never in the history of the society have the trials been better, and Mr. R. W. Christy and his daughter, who did most of the work, even to keeping the ground clear of weeds, were congratulated on their efforts. The official inspection by the Floral Committee took place on the 8th inst., and the visitors passed first to the rows of the four varieties that the committee had selected as worthy of receiving Certificates of Merit. The plants were grown in pairs, and each pair was 2 feet distant from its neighbours, thus allowing plenty of space for each variety to exhibit its true habit. Tea Rose easily justified its distinction for award, for in the rows it showed a prettier blush than at the show, and its merits were praised by all. The shade is sure to be popular with florists, and the blooms are of the best exhibition size. The colour is a cream-ground shaded rosy-buff. There is some talk of this novelty being re-named Sylvia. Margaret Fife is a distinct variety in the blue shades, and was ahead of all others of its section at the trials for size of bloom, whilst the lilac in the edges of the standards and wings make it particularly pleasing when bunched. Victory (Bolton) is a lavender flower of good size and quality. In varieties of this shade it needs a very critical eye to distinguish one from another, but apparently the committee considered it to be sufficiently distinct to award. Dora appears to be an attractive cream ground bicolor. When comparing these with others of comparatively equal merit, it was obvious that the Floral Committee had no easy task to perform, and it is small wonder that the decisions fail to please everybody. But the trials certainly showed how essential it is that awards should only be given after inspecting growing plants, for from their appearance several varieties might easily have obtained awards had the latter been given for bunches of bloom. Although the colour, size and distinctiveness of the type flower seemed to be all that could be desired, yet the presence of rogues showed that the variety was not fixed, and this would give rise to disappointment and confusion.

The "rank and file" in the trials revealed nothing outstanding, although they all marked a great advance compared to the time when Emily Henderson, which was seen later in Messrs. Dobbie's nursery, was the Sweet Pea of the day. The trials showed that fresh raisers are entering the field, and the older breeders must look to their laurels, for the newcomers have some promising varieties. We made notes of a few of the varieties. Cis Wright, No. 15, showed up well, but as some of the plants varied a little in shade the variety was passed by the committee. This Sweet Pea would make a pleasing combination with Tea Rose, the colour being a delicate creamy-pink, whilst the flowers

are large and very double. Peace, No. 28, is a very fine cream-pink flower, fairly deep in tone, and a very large size, somewhat like Mr. Bolton's Marvel. No. 51, a giant maroon variety, appeared quite distinct from those in commerce, the purplish shade in the wings and standard being almost entirely eliminated. No. 62, an orange-scarlet variety, much in the way of Thomas Stevenson, was worthy of note, the flowers being extra large and very bright, but quite distinct from President, No. 59. This variety was grand, and but for an odd plant or two of a slightly paler shade must have been recognised by the committee. It will doubtless become popular. No. 80, Stevenson's Victory, also appeared to possess great merit. In type and growth it is like Illuminator, but very much brighter and retains its colour well in bright sunshine. No. 91, Old Rose, was one of the newest and most distinct varieties in the trials. The name, Old Rose, aptly describes the tone, and as the flower is large the variety should be much in demand, both for exhibition and decorative purposes. No. 38, Crimson Queen, is another distinct variety; the colour may be described as bright blood-red, similar to the older variety, Premier, but larger in the flower. No. 32, "New Miriam Beaver," is an attractive cream-pink variety, reminding us of Mr. Holmes' Lilian, but, like this variety, just a little weak in the top bloom. In going through the trials a high standard of fixity was the feature of certain raisers' stocks, whilst others were careless to keep their stocks pure.

Taken collectively the trials were particularly interesting. The visitors had a kindly reception by the superintendent and his wife, Mr. and Mrs. Christy, whilst the arrangements made by the secretary, Mr. H. T. Tigwell, were complete in every detail. The afternoon was spent in visits to Messrs. A. Dickson and Sons' and Messrs. Dobbie and Co.'s nurseries at Marks Tey; in both establishments many acres of Sweet Peas are grown for seed purposes.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending July 21.

A Cold, Wet and Windy Week.—This was a cold week, and more particularly was this the case during the daytime. On the two coldest days the temperature in the thermometer-screen at no time rose above 59°. The ground is at the present time 5° colder at 1 foot deep and 3° colder at 2 feet deep than is seasonable. Rain fell on four days, and to the total depth of nearly 2 inches, making this the wettest week since the second week in May, or for nine weeks. On the 14th inst. rain fell to the depth of nearly one inch. Between 9 and 10 p.m. on that day the rain was falling for eight minutes, at the rate of $\frac{3}{4}$ inch an hour. During the week 6 $\frac{1}{2}$ gallons of rainwater came through the bare soil gauge, but none has come through that on which short grass is growing for eight weeks. Both gauges are 3 feet square and 2 $\frac{1}{2}$ feet deep. The sun shone on an average for 5 $\frac{1}{2}$ hours a day, which is three-quarters of an hour a day short of the mean daily duration in July. This was the windiest week for twelve weeks, and the wind came almost exclusively from some westerly point. The mean velocity for the windiest hour rose to twenty-one miles—direction west—making this the windiest hour since April 9, or for fourteen weeks. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 9 per cent. E. M.

GARDENING APPOINTMENTS.

Mr. E. Matthews, late of Newstead Abbey Gardens, Nottinghamshire, as Gardener to His Grace the DUKE OF WELLINGTON, K.G., Stratfield-Saye, Mortimer, R.S.O., Berkshire.

Mr. F. Capp, as Gardener to Captain and Lady BETTY TRAFFORD, Wroxham Hall, Norwich. The many friends of Mr. Capp will deeply sympathise with him in the loss he has sustained in the death of his wife, which occurred on the 8th inst., shortly after taking up his post at Wroxham.

DEBATING SOCIETIES.

SCOTTISH HORTICULTURAL.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on the 6th inst. Mr. Pirie, the President, was in the chair, and there was an attendance of seventy members. The evening was devoted to an exhibition of autochrome lantern slides of gardens, plants and flowers by the Secretary. It was resolved to abandon the proposed excursion to Mount Melville on August 7.

MARKETS.

COVENT GARDEN, July 21.

Cut Flowers, &c.: Average Wholesale Prices.

	a.d.	a.d.		a.d.	a.d.
Achillea, per doz. bunches ..	2 0	3 0	Lilium lancifolium rubrum, per doz., long ..	1 3	1 6
Alstroemeria, per doz. bunches ..	3 0	4 0	— — short ..	0 9	1 0
Carnations, per dozen, blooms ..	0 6	2 0	Lily-of-the-Valley, per dozen bunches ..		
— Malmesbury, per doz. blooms ..	2 6	3 0	— extra special ..	21	0 24 0
— pink ..	2 6	3 0	— special ..	15	0 13 0
Coreopsis, per doz. bunches ..	0 6	1 0	— ordinary ..	10	0 12 0
Cornflower, per doz. bun., blue ..	0 9	1 0	Marguerites, yellow, per doz. bun. ..	1 0	1 6
— white ..	1 0	1 6	Orchids, per doz.: ..		
— pink ..	1 0	1 6	— Cattleya ..	8	0 10 0
Delphinium, per doz. bunches ..	2 0	4 0	— Cypripedium ..	2	6 4 0
Encharis, per doz. bunches ..	0 9	1 0	— Odontoglossum crispum ..	1	6 2 0
Gallardia, per doz. bunches ..	0 9	1 0	Pelargonium, per doz. bunches ..	4	0 6 0
Gardenias, per box of 15 and 18 blooms ..	2 6	3 0	— double scarlet ..	4	0 6 0
Gladioli: ..			— white, per doz. bunches ..	4	0 5 0
— Brechleyensis, per doz. spikes ..	1 6	2 0	Roses, per dozen blooms ..	0 6	2 0
— The Bride (white) ..	4	0 6 0	Scabiosa caucasica (mauve), per doz. bun. ..	2	6 3 0
— America, per doz. spikes ..	1 0	1 6	Spiraea, white, per doz. bunches ..	—	—
— Pink Beauty ..	0 9	1 3	Statice, mauve, per doz. bun. ..	4	0 6 0
Gypsophila, white, per doz. bun. ..	4	0 6 0	Stephanotis, per doz. bunches ..	1	0 —
— paniculata, per doz. bunches ..	4	0 6 0	Stock, double white, per doz. bun. ..	4	0 6 0
Iceland poppies, per doz. bun. ..	0 9	1 0	— mauve, per doz. bunches ..	6	0 8 0
Lapageria, per doz. blooms ..	1 6	2 0	Sultan, white, mauve, yellow, per doz. bun. ..	2	0 3 0
Lilium longiflorum, per doz., long ..	2 0	2 3	Sweet Peas, per doz. bunches ..	3	0 4 0
— short ..	1	0 2 0	— special ..	3	0 4 0
— lancifolium album, long ..	1 6	2 0	— ordinary ..	2	0 2 6
— — short ..	1 3	1 6	White Heather, per doz. bunches ..	6	0 9 0

REMARKS.—White flowers offer a good selection in the following kinds:—Liliums, Asters, Stocks, Roses, Gladioli, The Bride, Stephanotis, Tuberoses, Lapagerias, White Sultan and Lily-of-the-Valley, of which some good spikes are obtainable. There is no particular demand for any of the coloured flowers, and those most in demand are mauve Statice, mauve Sultans, and scarlet Gladioli. Brechleyensis; good mauve Stock finds a ready sale. Carnations are still very plentiful in the following varieties:—Carola, Delight, Enchantress Supreme, Mayday, Empire Day, British Queen, Una Wallace, Winsor, White Perfection, White Enchantress, Mikado, Beacon, Scarlet Glow, Scarlet Champion and New Salmon. Souvenir de la Malmesbury Carnations are scarcer, but there is little demand for these flowers this season. The only good Roses now are of the varieties Mme. Abel Chatenay, Melody, Molly Crawford, Lady Hillington, Mrs. Russell and Sunburst. Lavender is arriving in excellent condition, and there is a fairly good supply of spikes. There are many kinds of foliage obtainable, including Asparagus plumosus, A. Sprengerii—in long trails and short and medium sprays—Adiantum Fern (Maidenhair), and well-grown Smilax. Gypsophila paniculata is more plentiful, but G. elegans is nearly over.

Fruit: Average Wholesale Prices.

	a.d.	a.d.		a.d.	a.d.
Apples—			Grapes, Canon		
— Australasian, per box ..	15	0 17 0	— Hall, per lb. ..	1	6 3 6
— English cooking, per $\frac{1}{2}$ bus. ..	2 6	3 6	— Muscat, per lb. ..	1	0 2 6
Apricots, Continental, per $\frac{1}{2}$ bushel ..	8	0 11 0	Greenages, Continental, per $\frac{1}{2}$ bus. ..	7	6 15 0
Bananas, bunch: ..			Loganberries, skip ..	1	0 —
— Medium ..	7	6 —	Lycchies, per dz. lbs. ..	17	0 18 0
— X-medium ..	8	6 —	Melons, each ..	2	0 3 0
— Extra ..	9	6 —	— French Cantaloupe, each ..	3	0 5 0
— Double X ..	10	6 —	Nectarines, per doz. ..	2	0 10 0
— Giant X ..	11	0 14 0	Nuts, Almonds, per bag ..	7	0 —
— Red, per ton ..	£20	—	— Brazils, new, per cwt. ..	82	0 60 0
— Jamaica, per ton ..	£13	£14	— Coconuts, per 100 ..	—	—
Cherries, English, per $\frac{1}{2}$ bus. ..	2	0 12 0	— Walnuts, dried, per cwt. ..	72	0 —
Currants, Black, per $\frac{1}{2}$ bus. ..	7	6 8 6	Oranges, per cwt. ..	—	—
— Red, per $\frac{1}{2}$ bus. ..	3	0 7 0	Peaches, English, per doz. ..	2	0 10 0
Figs, per doz. ..	1	0 3 0	Plums, per $\frac{1}{2}$ bus. ..	4	6 6 0
Gooseberries, dessert, per $\frac{1}{2}$ bushel ..	5	6 0 0	Raspberries, skips ..	1	0 1 6
Grape Fruit ..	25	0 30 0	— per doz. punnets ..	3	0 5 0
Grapes: English, Black, per lb. ..	0	9 2 0	Strawberries, per doz. punnets ..	5	0 9 0

REMARKS.—Home growers are sending the first consignments of the season of cooking Apples, and fruits of the dessert varieties Sturmer Pippin and French Crab are arriving from Australia. Oranges are scarce and dear. Strawberries are nearly over, but Raspberries and Loganberries are very plentiful. Red and Black Currants arrive in sufficient quantities to satisfy the demand. All seasonable varieties of Cherries are obtainable in excellent condition, and there are also some fine samples of dessert Gooseberries. Melons are still scarce, but Green Figs are plentiful. The market is well

Communications Received. — F. S. and Co.
(Thanks for 1s. for R.G.O.F. box) — Mrs. B. — T.
W. J. B. — G. — W. D. and Sons, Ltd. — A. N. —
A. M. — E. P. — J. J. and Sons — Berk. — J. — L. E. A.
L. L. — W. E. — F. E. — S. J. — C. W. — J. W. — I. — E. —
A. B. — R. — F. W. — M. R. — T. G. — W. — E. R. — G. — W. —
R. — B. — J. — G. — A. (Send your address, note for pub-
lication) — S. B. (Java) — F. C. G. — N. J. E. — Sir W. T. D.
— C. G. W. — T. F. C. — F. B. A. — J. R. F. — C. A. B. R.
— C. A. S. A. H. — A. G. — G. L. — J. McK. — A. C. W.
— C. H. E. — G. E. A. — Polo — G. H. — F. E. S. & Co. —
J. T. S. S. W. — M. Davey.

THE Gardeners' Chronicle

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SPECIES OF BEARDED IRIS

THE problem of species, interesting though it is, does not touch the work of the florist, except incidentally. Whether a plant is a species or only a variety does not so much matter as the genetic behaviour of its characters—whether they are simple, and will be transmitted intact, or are compound and will blend or break up and give, in other combinations, characters that are apparently new. It is from this florist's point of view that the records of my Iris crossings have been kept. The characters recorded, though I have found them useful and reliable, both for identification and for giving indications of parentage, are not always those relied on for the determination of species. Most of the crosses, also, were made primarily with horticultural objects, and since many Iris crosses are not effective or produce very few seeds, it is never certain there will be any that bear in a connected series on the problem of the original species.

It was, I believe, Sir Michael Foster's opinion that most, if not all, of the garden forms and so-called species of tall bearded Irises, including pallida, variegata, neglecta, amoena, squalens, sambucina and plicata, were derived from pallida or variegata, or some combination of these two species. In general, my experience of intercrossing these Irises agrees with this conclusion—to the extent that characters of pallida or variegata or both are in all of these. But I cannot help thinking—and the impression has strengthened with each year's flowering of my seedlings—that it is impossible to account for all the results obtained by combinations of these two species, and that there are well marked and persistent characters, or combinations of characters,

in some of the garden forms which could hardly have come from them alone. The conclusion, therefore, is that there is also at least one other species (possibly two) in these varieties of bearded Irises—not necessarily an unknown or undiscovered species, but one not hitherto recognised as having taken part in their evolution. I have, however, but little acquaintance with the species, and have made very few crosses with them.

As regards the general type of squalens and of neglecta there is no difficulty. From crosses of pallida varieties with variegata varieties I have obtained both squalens and neglecta—generally in about equal numbers—from the same pod of seed, and Mr. Dykes' discovery in Dalmatia of squalens growing in conjunction with these two species settles its parentage beyond doubt. But then there is the red type of squalens, of which Jacquiniiana is a good example, and this I have as yet never obtained, except when the pallida used was a Red Pallida, or a variety which had plicata in it.

Though pallida crossed with variegata (my crosses are always of *varieties*, unless otherwise stated) gives neglectas, as yet I have never obtained amoena (of the Thorbeck type, with pure white standards) from such a cross, nor, indeed, from any cross unless amoena was already in the ancestry of the varieties used, with one exception. Flavescens crossed with a variety of variegata gave (besides variegata and pale squalens) several amoena seedlings, with falls generally not so deeply coloured as the Thorbeck type, but with pure white standards. It was an unexpected result, and I repeated the cross and confirmed it. Apparently, then, this amoena type is due to a colour-inhibiting factor, which in amoenas acts only on the standards—as in the analogous case of white Foxgloves,* where the colour-inhibiting factor acts on the ground, but not on the spot colour—and it may be reasonably suggested that this factor is the same as that in one of the parents of flavescens. In support of this view is the result of some amoena × squalens crosses, which give a good proportion of total whites or creams, the factor in these cases acting on both series of segments. In further confirmation, a cross of Queen of May × Thorbeck gave, in addition to some that were nearly white, one seedling practically identical with flavescens itself; other crosses also showing that flavescens, or one of its parents, is also in Queen of May. What, then, is flavescens? It is a hybrid, undoubtedly. Is it possible that l. lutescens, or its variety Statellae, is one of its parents? and, if so, what could the other be? I think, however, that flavescens is very likely to have been produced by a cross between variegata and a white Iris—albicans or florentina—since it seeds fairly freely with pollen of variegata varieties, while I have been able to get very little good seed from it with pollen of pallida, plicata, sambucina, or Red Squalens.

The considerable proportion of white seedlings which come from crosses of flavescens, or of varieties that have flavescens in them, seems also good evidence of the other parent being a white, but it is impossible to test them directly by crossing flavescens and albicans, as the pollen of both appears to be infertile.

Then there are Red Pallida, sambucina, and plicata, and apparently these are connected. The type of Red Pallida I refer to chiefly is that represented by the varieties Assaurez, Astarte, and others, as these appear to represent the more primitive type. They are plants of medium height with smaller flowers than pallida, and comparatively narrow perianth segments, especially the falls, which are generally spreading or semi-spreading. They are always approximately self-coloured, and have dense, projecting, conspicuous beards. The taller Red Pallidas of the Rubella type appear to be the result of crossing the above with plicatas, or with seedlings of pallida-plicata crosses, and are therefore probably further removed from the original forms.

What is this Red Pallida? If only pallida and variegata are admitted as the original parents of the tall June-flowering bearded Irises, the inference would be that Red Pallida is the result of cumulative crossing of these two species. If so, what is it that produces the red colour? It seems unlikely that it can come from the red-brown in the falls of variegata, diffused and blending with the violet of pallida, as this red-brown is confined to the falls and the claws of the standards in variegata, and the colouring of the Red Pallidas is typically nearly uniform in standards and falls. Is it then, perhaps, due to the blending of the yellow (which is in both standards and falls of variegata) with the pallida violet? Red Pallidas certainly show evidence of having some yellow coloured species in them, as in most the style branches and the base of the standards and falls are stained more or less with yellow; nevertheless, my crosses—and in quest of the Crimson Iris I have made very many with this idea in mind—not only give no evidence that the red colour has been so produced (by the infusion of yellow from variegata, or any other source), but tend to show that it could not be. I have never obtained anything approaching Red Pallida or Red Squalens from any cross, unless "red" (including the latent red in plicata varieties) was in one or both of the parents—known or obvious—except from crosses of the white amoena, Mrs. H. Darwin. These always give some red toned seedlings, and I expect if its parentage is known it will prove to have sambucina or Red Squalens in it, for many of its seedlings are very near sambucina.

Another suggestion is that Red Pallida is simply a pallida from which a factor has dropped out. It may be so, but that would not explain its associated characters—the typical dense beard, for instance, which is distinct from the pallida beard, quite different from the variegata

* "On Colour Inheritance in Foxgloves," *Gard. Chron.*, June 25, 1910, p. 417.

beard, and, so far as my *pallida* × *variegata* crosses go, has never yet appeared through the combination of these. The *plicata* beard, though not quite the same, is much nearer. So I have been driven to conclude that there is some other, as yet unrecognised, species to which the introduction of red into these June Irises is due. And as there seems to be some connection between *Red Pallida* and *plicata* and *sambucina*, it will be well to take these also into consideration. A. J. Bliss.

(To be continued.)

MASDEVALLIAS AT MESSRS. JAMES CYPHER AND SONS'.

ALTHOUGH keeping well to the fore with hybrid Orchids at the Exotic Nurseries, Cheltenham, the old-time species of *Dendrobium*, *Miltonia* and *Masdevallia*, are still cultivated with the same care as formerly, and hence the pretty groups which Mr. John Cypher so successfully arranges at the leading exhibitions always have greater variety and interest than many others. The same may be said of the display of bloom which greets the visitor at the Cheltenham

however, that *Masdevallias* are evergreen, and should not be rested dry.

Recently the show of *Miltonia vexillaria* varieties and its hybrids arranged with *Masdevallias* made a charming picture, the scarlet, mauve, violet and other tints of the *Masdevallia Harryana*, the bright red of *M. ignea*, and the orange-scarlet of *M. Veitchiana grandiflora* arranging very effectively with the rose-tinted *Miltonias*.

THE BOTTLING OF FRUIT.

IN the bottling of fruit it is necessary in the first instance to procure a suitable stock of jars or bottles. In those of the best type the parts are interchangeable. Four sizes are usually stocked by ironmongers and china warehousemen, these generally holding from one to four pounds of fruit.

Wide-mouthed bottles are in every respect best. Tins are cheaper, but they do not admit of being used repeatedly, and are troublesome to clean. Ordinary jam or marmalade jars are sometimes used with success, but then to keep the contents airtight one has to seal the top with paraffin wax or mutton fat. If this sealing is not effective the fruit fails to keep well.

Use only the best of fruit. Except in the case of Gooseberries, which should be procured green, fruits are most suitable for bottling when just approaching ripeness. Pears with very soft flesh should be avoided. Handle all fruit carefully when peeling them. Carefully overlook all fruit, putting aside for immediate use any specimens cracked or bruised. Remove all stems, and "top and tail" Gooseberries and Currants. In the case of Raspberries or Strawberries search diligently for crawling parasites. Apples and Pears should be peeled, then halved and quartered, and cored. Wipe all Plums and Cherries with a soft woollen cloth.

First Method (with or without syrup).—Pack the fruit carefully into the jars without crushing and fill up with cold water or syrup. Place the rubber band and cap in position, but do not screw down the top, as the air must escape when heated. Now stand the jars upright in a pan or pot of cold water—a fish kettle will do quite well—but do not allow the jar to touch the sides or bottom of the pot. With this in view, place the jars upon a piece of wood or tile, and separate them with a cloth or newspaper. Do not allow the flame to be too fierce, and if a gas stove is used keep the jet low. Heat the water to a temperature of about 170° or 180° Fahrenheit, but do not allow it to boil. Keep the jars in this hot water for about twenty to thirty minutes, according to the size of the fruit and its degree of ripeness. When sufficiently cooked the fruit will show first signs of cracking. Then lift out, screw on the tops, and put the jars away to cool. When quite cold unscrew. If the process has been successful the lids will be tight, and on opening there will be a rush of air inwards to fill up the vacuum caused by the heating and cooling. Should the lids be loose the heating process should be repeated for another fifteen minutes. When finally replacing the bands, a little olive oil rubbed on the indiarubber will prevent sticking, and help to preserve the rubber. Screw up tightly, and store in a cool, dark place.

Fruit preserved in its natural state is very suitable for pies or puddings, but for eating with custard, cream, or junket it is generally better to use syrup. Half a pound of lump sugar (preserving sugar) added to a quart of water will make a suitable thin syrup; while sugar up to twice the weight may be used in producing a thicker syrup. Put the sugar and cold water into a saucepan or preserving pan and boil, but do not pour it over the fruit until quite cold. Then proceed in the same way as before.

Second Method (without syrup).—Fill up the jars as before, but add no water, and leave off the rubber bands and caps. Now place the jars



FIG. 21.—*LAELIO-CATTELEYA GOLD STAR*: COLOUR OF FLOWERS, CHROME-YELLOW WITH CLARET-RED ELOTTCHES ON LIP.

ORCHID NOTES AND CLEANINGS.

LAELIO-CATTELEYA GOLD STAR.

YELLOW Cattleyas and *Laelio-Cattleyas* are greatly in demand, the section made familiar by the forms of *L.-C. Myra*, although not the largest in size, being always favourites.

L.-C. Gold Star (see fig. 21), raised from a cross between *L.-C. Ariel* (*C. Dowiana* × *L. Cowanii*) and *C. Mendelii*, for which Messrs. Sander and Sons received an Award of Merit at the recent Chelsea Show, is a welcome addition to the group. The flowers are chrome-yellow, the front of the lip being claret-red. Plants of the whole section are very free in growth, and flower well without special treatment.

ham nurseries at all seasons of the year. Fashion in flowers has affected the demand for many showy classes of Orchids, one of the most noticeable being the *Masdevallias*. In many gardens they are discontinued to make room often for less showy and uninteresting subjects, but at Cheltenham a good collection of them is grown, and some of the sections are to be seen in bloom at most seasons. Some curious species, such as *Masdevallia gargantua*, *M. triangularis*, *M. Chimaera*, form a pleasing contrast to the showier section.

Masdevallias are very easy to cultivate, any shady, moist part of an ordinary greenhouse or conservatory, failing a cool Orchid house, being good accommodation for them if careful watering with rain-water be given. It may be pointed out,

in an oven for a few minutes and remove when the fruit shows signs of cracking. Fill up with boiling water and screw on the lids immediately. Allow the liquid to cool thoroughly and then store away. This method is as good as the other, and gives less trouble. Fruit treated either way will keep in good condition for a considerable time. Gooseberries preserved in the June of one year will keep splendidly until the fresh Gooseberries come again. The fruit is in every way as good as the finest bottled fruits obtainable from the grocer and costs about half the price.

The heaviest item of expenditure is the initial outlay on bottles, though it should be remembered that the cost is spread over many years, for breakages are rare, and the jars are very strong and will last for a long time. Some may need fresh bands, but these are very cheap. Complete fruit bottles may be bought at prices very much as follows:—1 lb., 4½d.; 2 lb., 5½d.; 3 lb., 6½d.; 4 lb., 7½d., with a small reduction upon half a dozen or a dozen.

When the jars are emptied they should be carefully washed and the various parts thoroughly dried and put away for future use. Inspect the bands carefully before using them a second or third time, and throw away defective ones, or they may ruin the success of your bottling. They have the important duty of making the jars airtight, and to perform this duty they must be in good condition. *Hemming Barker, A.C.P., Int.B.Sc.*

THE FERNERY.

VARIATION: ITS STARTING-POINT.

SINCE variation in the form of a plant can only be observed when there has been sufficient growth to evidence its existence, the question of its starting-point, that is, where the first abnormal mother-cell, from which the subsequent abnormal growth is derived, originates, is probably an insoluble one. Despite this rather disheartening probability, it is, however, of great interest to record the various ways in which such sports have been known to declare themselves, and in this way provide at least some material upon which theories, if not certainties, may be based by extended investigation. In connection with Ferns, and particularly British Ferns, which have afforded such abundant material, both in the wild state and under culture, by selection from the offspring of such, the Fern collector can throw no light upon our problem. All he can say is that among possibly many thousands of plants of the normal type he has found one, or it may be several, possessing distinct characters, though of the same species undoubtedly as the others associated therewith. If there are more than one at or near the same spot, he will probably be justified in his conclusion that these are either the direct offspring of some normal plant in the vicinity, which had yielded such offspring through spores endowed with the capacity of variation, or that equally, probably, all but one of them are the offspring of one plant from whose spores they have sprung, as what we may term secondary sports. Naturally, however, he cannot trace how that first one originated. It may have commenced as a spore on an otherwise normal plant, or it may have started independently of the spore as an offset produced by a bulbil, but we have no record of a Fern sport being found that was so indubitably associated and structurally connected with a normal specimen as to admit of proof of this. Furthermore, if we assume that the sportive character originated in a spore, that spore, when it was detached and found a suitable nidus, produced a prothallus; this in its turn produced a large number of antherozoids or male fertilising germs, equivalent to pollen grains, and a cluster of archegonia, each of which had an incipient seed at its base, which, being fertilised by an antherozoid, produced sub-

sequently the sport. Who, however, can determine whether or not the aberrant capacity may not have originated in an abnormal antherozoid or an abnormal archegonial seed? All we can know is that by a conjunction a Fern was engendered, which threw off the ancestral structural plan, and adopted another so satisfying to the plant as to be inherited to the full by its offspring. It is therefore seen that the starting-point of a variety or sport may occur in several ways, viz., by a merely vegetative bud, by a spore on an otherwise normal plant, or by antherozoids or archegonial "seeds" on an otherwise normal prothallus. These last two are, it is true, only assumptions, but they are reasonable ones, when we know how it has been proved by experiments that Nature knows no limit to her inventive capacity, the prothallus and the Fern itself having exhausted every conceivable variation in the life-cycle, as proved by Professors Bower and Farmer, Dr. Lang, and Miss Digby. I may now cite a few instances which have come under my notice. First, with regard to bulbil sports, I may mention the recognised case when a large plant of the Jones and Fox section, *P. angulare plumosum densum* was maliciously chopped up into over a dozen fragments in Mr. Barnes' collection by some miscreant. These fragments were collected by Mr. Whitwell, of Kendal, and under his care each one formed a new axis of growth and a root system, so that subsequently a row of splendid specimens appeared in Mr. Whitwell's garden. My attention being called to these, I noticed that one, though indubitably of that particular section, and equally indubitably derived from a division of the original specimen, was distinctly different from the rest, both in habit of growth and division of frond. This proved that the cell by which the plant had originated as a bud on one of the fragments had adopted a special and new plan of growth—i.e., had sported. It is well known that bulbil propagation, though fairly reliable as regards true reproduction of the type, is by no means infallible. That sportive spores may arise on an otherwise normal or nearly normal plant has been shown in two interesting instances in my personal experience. Many years ago a very handsome new form of *Gymnogramme lauchana* was raised by Messrs. Dixon, of Hackney. This was a very heavily crested grandiceps, and their foreman told me that on a normal specimen he observed a single fan-shaped pinnule bearing spores, and that on sowing these, a large batch of plants all alike, and of the variety named, resulted. Here it is clear that the sportive principle had extended beyond the sori affected so as to affect the foliage which bore them, or that it pervaded so much of the local foliar area, and thus affected the sori. In the second case the writer found, at Staverton, in Devon, a strong specimen of the common Harts-tongue (*Scolopendrium vulgare*), with a large number of fronds, all but one of which were perfectly normal. The exception was of the type known as *sagittatum projectum*, and this bearing a few spores was gathered, and the spores eventually sown. Some half a dozen plants resulted, all of which were alike, and all of a true *sagittatum projectum* form, plus terminal crests. Here, then, we see again a local affection of the foliage embracing an entire frond associated with a sportive tendency in the spores. Another question in this connection is, How far is the sportive tendency dependent upon seasonal influence? Experience has taught the writer that a varietal Fern capable of yielding exceptionally fine offspring at one time may at another fail more or less entirely to do so. Thus, the now well-known and splendid strain of *Athyrium Filix-foemina* known as the "superbum" yielded from the first crop of spores which the "superbum" parent produced two plumose sections, one crested and the other uncrested, all of the greatest merit. The parent plant still forms one of the chief

ornaments of our collection, but repeated sowings since have only yielded mediocre forms or failed entirely, presumably owing to long continued culture under glass having weakened its vitality. Another *Athyrium*, *A. F.-f. cristatum* Kilrushense, a find of my own, and recognised as the finest cristate wild find of the species, yielded from the first sowing a good crop of the new form, but several subsequent sowings have been hardly crested at all at one time, but fairly true at others, for which the only explanation is, I think, seasonal influence of a little understood character. *A. F.-f. Clarissima* on which apospory was first discovered, has never, I believe, reproduced the large local pear-shaped excrescences which led to the discovery. It has been maintained by some authorities that all sports are due to hybridisation or crossing, by which the normal specific type of growth is interfered with, with the result that a sort of compromise is effected involving the change observed. No thoroughgoing student of variation can, however, accept this theory. One fact alone suffices to contradict it, viz., that the new characters are rarely, if ever, specific ones, attributable to neighbouring plants. Cresting or tasselling, to wit, has never been a specific character, and yet so many abnormal Ferns present that peculiarity that the power of sporting in that peculiar direction appears common to all genera. In Great Britain, as in other countries, some genera are only represented by a single species, and yet these single species, *Athyrium Filix-foemina*, *Scolopendrium vulgare*, and *Blechnum spicant*, for instance, have been very generous in spontaneous wild sports. *Chas. T. Drury, V.M.H., F.L.S.*

THE ROSARY.

NEW ROSES AT BAGATELLE.

OUR French correspondent forwards us the following notes on new Roses in supplement to that contained in the list of awards already published in this journal (July 3, 1915, p. 3).

Of the Roses exhibited by British growers, the following call for favourable comment:—Lady Dunleath, with flowers of a yellow-orange, by Messrs. Alex. Dickson and Sons, who also exhibited Queen Mary, a Hybrid Tea of a yellow colour passing to a delicate rose at the edge, a vigorous, floriferous and sweet-smelling variety. The same raiser also showed Irish Flame and Chrissie MacKellar, the former a single, the latter a semi-double. Also exhibited were Moonlight, raised by Rev. J. H. Pemberton; Royal Standard, by Messrs. Dobbie; and Sultana, by Mr. Chas. Turner.

BEDDING ROSES FOR LIGHT SOILS.

Now that Roses are at their full beauty it is a suitable time to take notes for use at planting time next autumn. Those whose soil is light and porous will find such notes especially valuable, for certain varieties which succeed well in heavy loam are comparative failures when grown in light, sandy soil. Fortune's Yellow does extremely well here trained on the south-west side of pillars, flowering freely and early. *Rosa sinica* Anemone is amongst the first to open its large flowers, which are coloured deep pink, and this also does well with us. A bed of large weeping standards of the varieties Elisa Robichon, of salmon-buff colour, and Leonine Garvie, salmon and rose colour, on a ground work of Enchantress, which continues in bloom until destroyed by frost, is a most delightful feature. This bed is carpeted with Violetta Blue King, which gives a charming finish. Other varieties of Rose that can be recommended for light soils are Marie van Houtte, Georges Nabonnand, Souvenir de Pierre Notting, Madame Melanie, Sappho, Killarney, Lyon, Rayon d'Or, Gruss an Tey,

litz, Lord Roberts, Madame Ravary, Richmond, La France (89), Maman Cochet, Liberty, Etoile de France, Captain Christy, Caroline Testout, and Juliet. *W. A. Cook, Godalming.*

ROSE FLAME OF FIRE.

MESSRS. S. MCGREDY AND SONS showed a pretty novelty at the exhibition of the National Rose Society. In the bud stage the flowers of Flame of Fire (see fig. 22) were long and pointed, and as the petals unfolded they exhibited a lovely shade of apricot diffused with orange, the orange colour lightening with age. The flower-stems are erect, and when ex-



FIG. 22.—ROSE FLAME OF FIRE: COLOUR, APRICOT SUFFUSED WITH BRIGHT ORANGE.

hibited they bore fine, healthy-looking foliage. Although this new addition to the H.T. section is smaller than most exhibition Roses, it will be sure to gain popular appreciation.

PUBLICATIONS RECEIVED.—*Fortieth Annual Report of the Ontario Agricultural College and Experimental Farm, 1914*, and the *Report of the Minister of Agriculture, Province of Ontario*. (Toronto: L. K. Cameron.)—*The Art of Landscape Architecture*. By Samuel Parson. (London: G. P. Putnam's Sons.) Price 15s.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables, Supplement, Gard. Chron., July 24, 1915.)

O, SCOTLAND, N.

SUTHERLAND.—The majority of the fruit crops here are under the average. We had about nine weeks' drought, which was disastrous for most of the crops, especially Strawberries. The soil here is light, black and sandy, with a fair amount of humus. *D. Melville, Dunrobin Castle Gardens.*

I, SCOTLAND, E.

ABERDEENSHIRE.—The Strawberry crop was successful, but Black Currants and Gooseberries were damaged by late frosts in May, and were under the average in this district. Apples do not seem to have suffered at all, and promise well. Raspberries and Red Currants are satisfactory, the latter being grown here on a sheltered north wall. *W. Henderson, Meldrum House Gardens.*

BANFFSHIRE.—The prospects for all fruit crops in this district were good until May 9, after which we had frosts every night until May 19, varying from 4° to 8°. The Plum and Cherry blossom was affected severely. *George Edwards, Ballindalloch Castle Gardens.*

BERWICKSHIRE.—This season Cherries and Plums on walls are yielding small crops; the fruit of the former, however, is of good quality. Plums are very scarce; the trees blossomed profusely, but the long spell of drought, accompanied by cold nights, did much damage. Apples and Pears are under average, but Raspberries look extremely well, and are plentiful. Black and Red Currants have good crops. Gooseberries are rather under the average but are of good quality. Strawberries bore average crops, and were of very fine quality. Our soil is red loam. *Robert Stuart, Thirlestane Castle Gardens, Lauder.*

FIFESHIRE.—Stone fruits suffered from the spring frosts. The soil here is good, but it rests on a cold bottom. *W. Henderson, Balbirnie Gardens, Markinch.*

FORFARSHIRE.—In this district the prospects in the spring were good; we had, however, a snowstorm with 12° of frost in the second week of May, and this destroyed the greater part of the Black Currants, Gooseberries and Plums, which up to this date had shown every appearance of record crops. Apples, however, were not damaged, and they will yield a heavy crop. The soil is loamy, with sandy bottom, and we are 600 feet above sea level. *A. McAulie, Ruthven House Gardens, Meikle.*

HADDINGTONSHIRE.—There was a general deficiency of blossom on most fruit trees, the exceptions being Peaches, Apricots and Morello Cherries. We escaped the frosts which resulted in so much damage in some other districts, but the drought up to June 26 had a prejudicial effect on the Strawberry crops. After the heavy rain on that day the fruit swelled satisfactorily. Gooseberries, Currants and Raspberries are bearing large crops. On the whole, the fruit crops, though not abundant, are satisfactory. *R. P. Brookerston, Tynninghame Gardens, Prestonkirk.*

—During the fifty-four years I have been at Smeaton I have never seen such poor crops of Apples and Pears as these of this season. Apple and Pear trees blossomed well, but cold weather at the end of April and the beginning of May had disastrous results. Small fruits are plentiful, with the exception of Strawberries, which yielded a fair crop. The subsoil is cold, yellow clay. *John Black, Smeaton Gardens, Prestonkirk.*

KINCARDINESHIRE.—The fruit crops are a fortnight late here this year. Early Strawberries were a failure, but Black Currants, Red Currants, Raspberries, Loganberries and Morello Cherries are good crops. Late frosts damaged the Plums when in flower, and the crop is poor, although Damsons are promising well. There is good deep soil here, of a rather firm character. It does not crack, and is capable of resisting a long drought. The rainfall average is only 23 inches, but very little watering is required when the plants have taken root. *William Thomson, Urie House Gardens, Stonehaven.*

KINROSS-SHIRE.—There was every prospect of good crops of fruit in this district, but late frosts in May and the dry weather during the month of June reduced most of the small fruits

ROSS-SHIRE.—The late frosts did much damage to the fruit crops, which previously had shown promise. The soil here is of a stiff, wet and cold nature. *W. Macdonald, Ben Damph Forest Gardens, Torridon.*

—The fruit crops, on the whole, are very good. While Black Currants are scarce, Red and White Currants are more than usually plentiful. There is an excellent crop of Raspberries, and of Apples there is an exceptionally large quantity. The soil here is light gravel. *M. Martin, Norar House Gardens, Evanton.*

to average quantities. The soil here is very light and sandy. *R. Fraser, Kinross House Gardens.*

LINLITHGOWSHIRE.—The fruit crops, with the exception of Raspberries and Strawberries, suffered from late frosts. The soil is a good loam with a clay sub-soil. *James Boyd, Newliston Gardens, Kirkliston.*

—The weather during the flowering period of Pears, Plums and Gooseberries was extremely cold, several degrees of frost being registered on more than one occasion. The result was that these fruits set indifferently. On the contrary Apricots, Peaches and Cherries are good crops. *John Highgate, Hopetoun Gardens, South Queensferry.*

MIDLOTHIAN.—The fruit crops here are satisfactory, especially after such heavy crops as the trees bore last year. Pears, however, are almost a failure, with the exception of the variety Catillac, which is bearing a heavy crop. Of small fruits, Raspberries and Black Currants are plentiful. *A. C. Scott, Oxenford Castle Gardens, Ford.*

—Fruit trees of all kinds carried more blossom than usual. Pear and Plum trees were damaged by severe frost and north-east winds, and have only poor crops. Apples set an average crop. Gooseberries and Black Currants when in flower were much injured by frost. The soil is light, with a sub-soil of gravel. *James Whytock, Dalkeith Gardens.*

MORAYSHIRE.—Apricots, Peaches and Apples set too many fruits, and required much thinning. Victoria and Czar Plums are bearing good crops, but other varieties are not yielding well. Our rainfall between May 15 and beginning of July was only about $\frac{3}{4}$ inch. *Charles Webster, Gordon Castle Gardens, Fochabers.*

SILKIRKSHIRE.—The Apple crop is a very fine one. Plums will be scarce owing to the frost on May 12, when 15° were registered, and on June 18, when 8° were registered. Black Currants are plentiful, but I think I am the only gardener in this district who has succeeded with them, as the mite has been very destructive to most plantations. Raspberries are always successful here; the cold soil seeming to suit them. Red and White Currants and Gooseberries are plentiful. We had a good average crop of early Strawberries, and late Strawberries were exceptionally good. The soil is rather light, with a sub-soil of clay. Crops are always late in this district. *John C. Lunt, Bowhill Gardens.*

6. SCOTLAND, W.

ARGYLLSHIRE.—Frosts and cold winds in May destroyed much blossom. Some bushes of Boskoop Giant Black Currant have dropped nearly all the fruit, while in other parts of the garden this variety is carrying a large crop. Black Champion Black Currant is yielding well. Apple Bramley's Seedling is again carrying a heavy crop of clean fruit. I consider this variety the most reliable Apple for kitchen use. Of Pears, the best this season are Pitmaston Duchess, Comte de Lamy, Winter Bon Chrétien, Durondeau, Doyenné du Comice, and Marguerite Marillat. Plums are less plentiful than they have been for many years, partly owing to the work of bullfinches, which are very numerous. *D. S. Melville, Pottaloch Gardens, Lochgilphead.*

—A favourable autumn last year enabled the wood and fruit buds to ripen well, but a cold, wet spring delayed the trees. During the blooming period we experienced a long spell of cold frosts and east winds, which proved disastrous, and only late varieties of Apples and Pears set well. Small bush fruits, owing to the cold weather, were about four weeks later in blossoming than last year, and consequently they escaped the late frosts, and are bearing fair average crops. Owing to drought, caterpillars have been very prevalent. Strawberries

bloomed well, and the rain came in time to swell the berries, and there has been a large crop of excellent quality. The soil in this district is of a light sandy nature overlying gravel. With an average rainfall it is well adapted to fruit culture. *George Haig, Bartaidine Gardens, Ledaig.*

AYRSHIRE.—The prospects for an abundant fruit crop were never better than up to May 13, when we had frost for five nights, 4° to 7° being registered. Much of the blossom was destroyed. In some places in this locality frost cut the Potatoes on June 18, but we did not register any frost on that occasion. *William Priest, Eglington Gardens, Kilwinning.*

DUMFRIESSHIRE.—Pear trees flowered profusely, but did not set their fruits well, owing to low night temperatures. Apple trees also flowered well, but a few of the earliest varieties were damaged by frost. Frost also injured the small fruits, and Black Currants suffered severely. Strawberries yielded a fine crop, rain coming at the right time to swell the fruit. *James McDonald, Dryfeholm Gardens, Lockerbie.*

—After a very wet February we had dry, changeable and cold weather, accompanied by an east wind until the end of June. There was no frost to injure fruit blossom after March until May 13, when we registered 6° of frost. Apple trees were flowering at the time, with the exception of Crawly Beauty, which was five days later. However, there was good average crops on walls, espaliers, small pyramids and bush trees. During June the weather was dry, 0.82 rain being registered, and crops made little progress. The first days of July brought abundant rain, and all crops improved, but the season is a late one. *John Urquhart, Hoddon Castle Gardens, Ecclefechan.*

LANARKSHIRE.—The fruit crops were badly affected by late May frosts, Plums, Pears, and Cherries being most seriously injured. Early Strawberries were small, owing to the dry weather, but later crops gave better results. *Wm. Archibald, Wishaw House Gardens, Wishaw.*

RENFREWSHIRE.—There was every prospect of a good fruit year, but 9° of frost on March 29 did much damage, and Plums, Cherries, Gooseberries and Black Currants suffered severely. Our soil is heavy, with a clay sub-soil. *Jas. Plenderleith, Blythswood Gardens.*

—Owing to 8° of frost occurring on May 15, what promised to be good crops were spoiled. The Gooseberries grown in the open had their berries frozen. *Robert D. Smartt, Barochan Gardens, Houston.*

STIRLINGSHIRE.—I have visited most of the private gardens within a 9-mile radius to obtain an accurate idea of the condition of the crops. This district is very hilly, and the soil is, as a rule, rather stiff. The climate does not seem to suit the larger hardy fruits, the difficulty being to get the wood ripened. Neither Peaches nor Apricots are grown. Sweet Cherries are scarce, but Morello Cherries are more plentiful. Plums are almost a failure. *J. Cunningham, Dumtreath Castle Gardens, Blanehead.*

—In this county Apples were not in blossom, with the exception of wall trees, at the time of the late frosts, and thus escaped injury. Strawberries yielded well, and the rain was in time to swell them. *John Middleton, Callendar House Gardens, Falkirk.*

WIGTOWNSHIRE.—Late frosts, when Pear trees were in full bloom, did much damage, and standard trees are carrying poor crops. The protection afforded to wall trees was the means of securing a good yield, which helps to counteract the shortage on standards. Strawberries promised well when in flower, but a prolonged period of drought reduced the size of the berries, and many of the fruits failed to swell. The Gooseberry crop is over the average here, but in other gardens in the neighbourhood

the crops are small. *Samuel Gordon, Monreith House Gardens, Whauphill.*

2. ENGLAND, N.E.

DURHAM.—All our Apple trees are very clean and healthy, and most of them are carrying crops, especially the following varieties:—Lord Grosvenor, Ecklinville Seedling, Worcester Pearmain, James Grieve, King of the Pippins, Stirling Castle, and Lord Suffield. All small fruits have suffered from drought and aphids. *W. Smith, Lambton Castle Gardens.*

NORTHUMBERLAND.—Owing to sharp frosts in the early part of May many fruits dropped, this particularly applying to Gooseberries and Pears, but these latter are an average crop of good quality. Apples are bearing large crops, and required much thinning. Black and Red Currants, Raspberries and Loganberries are above the average. Our soil is of a light nature, overlying gravel and sand. *Walter Thomson, Alnwick Castle Gardens, Alnwick.*

—There is an abundant crop of Apples, Peasgood's Nonsuch and Gascoyne's Scarlet Pippin both looking well. Pears and small fruits, especially Black Currants, were damaged by late frosts. Raspberries promise to be up to the average, and there was a good Strawberry crop. The soil here is light and sandy, and not suited to hot, dry weather. *J. Thomas, Bywell Hall Gardens, Stocksfield-on-Tyne.*

YORKSHIRE.—These gardens, situated 150 feet above sea-level, are exceptionally well sheltered. There are large crops of small fruits, with the exception of Black Currants, which have suffered from a severe attack of blight. The soil is a medium loam of good depth resting on chalk. *Sidney Legg, Dalton Holme Gardens, Beverley.*

—The fruit trees and bushes bloomed freely, but they did not set their fruit well. Drought and frost have since done much damage, and stone fruits have dropped freely. Gooseberries are practically a failure in some districts, but Black Currants are above the average. Strawberries promised well at the beginning of the season, but the young fruits shrivelled badly as the result of the June drought. The crops are thus below average in quantity, although the quality is good. *A. S. Galt, Rutherglen, Roundhay, Leeds.*

—The fruit crops are good, notwithstanding the severe drought in June. There are very good yields of Gooseberries, Strawberries, and Pears, but Apples, owing to lack of moisture, dropped many of their fruits, leaving only our average crop. Our soil is good loam, with a layer of clay on red sand. *Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.*

(To be continued.)

THE CHAIN OF SAINTE-BAUME.

(Concluded from p. 50.)

THE village of Plan d'Aups, where I slept is charmingly situated on the north side of the main range of Sainte-Baume, with its stupendous limestone cliffs. A few meadows ready for the scythe give an aspect of partial fertility in the early days of June. Close to the road is a mass of *Phleminis llerba-venti*, and in the cornfields are *Neslia paniculata*, *Iberis pinnata*, *Bromus patulus*, *Echinaria capitata*, a curious rigid grass impossible to mistake, *Asperula arvensis*, *Scandix australis*, *Valerianella echinata*, and other weeds, including the purple *Melampyrum arvense*, some of which had white or greenish-white flowers and bracts—a conspicuous variety in the corn.

In the pine-woods of the plateau, below the Forest of Ste. Baume itself, there is much Lavender—the form with green, narrow leaves. The Pines give shelter also to the Bee Orchis, *Geum sylvaticum*, and *G. urbanum*, *Vicia tenu-*

folia, *Genista hispanica*, *Acer monspessulanum*, *Juniper*, *Daphne Laureola*, the bright yellow *Achillea tomentosa*, *Xeranthemum inapertum*, and the shrubby whitish *Santolina incana*. Now we pass a picturesque farmhouse (*Ferme de Giniez*), with Walnuts, old Chestnuts, probably planted trees, a large Maple and Oaks. The path ascends towards the forest, and *Digitalis lutea*, *Cephalanthera pallens*, and *Euphorbia dulcis* come into view.

At the entrance to the thick forest—part of the *Forêt domaniale de Ste. Baume*—Holly is dominant, and then Beech, Sycamore, Yew, and Lime become the leading trees. Some of the Yews are particularly fine specimens. The undergrowth is very similar to that of a lime-stone wood in Switzerland, for we find, amongst others, *Sanicula*, *Tamus*, *Ruscus*, *Mercurialis perennis*, *Lithospermum purpureo-coeruleum*, *Anemone Hepatica*, *Melittis Melissophyllum*, *Coronilla Emerus*, *Campanula Trachelium*, *Phytolacca orbiculare*, *Lactuca perennis*, *Pyrethrum corymbosum*, *Polygonatum verticillatum*, *Lilium Martagon*, *Luzula sylvatica*, and *Melica nutans*.

Among the shady rocks, at about 2,500 feet, we come across *Saxifraga hypnoides*, *Geranium lucidum*, *G. Robertianum*, *Silene italica*, *Campanula rotundifolia*, *Biscutella laevigata*, *Sedum altissimum*, *Erysimum longifolium*, *Euonymus*, and *Neottia Nidus-avis*. On some of these same rocks also the handsome *Saxifraga lantoscana* reaches its most western limit in Europe. Having been asked to look for it by a French botanist, it was particularly gratifying to me to alight upon a few rocks thickly covered with this *Saxifraga*, surrounded by *Quercus Ilex*, *Coronilla Emerus*, *Cytisus sessilifolius*, *Acer Opalus*, Beech, Wild Balm, *Martagon Lily*, *Saxifraga hypnoides*, *Polygonatum*, *Euphorbia dulcis*, and *Hepatica*.

Near the cave, known as the *Grotte de Sainte-Baume*, *Hutchinsia petraea*, *Linaria simplex*, and *Veronica origanifolia* can be seen. By the path towards the Col du St. Pilon (about 950 m.) are *Rosa pimpinellifolia*, *Calamintha Acinos*, *Globularia nana*, and *Anthyllis montana* var. *intermedia*; while the rocks of the Col du Pilon itself are clothed with the rare silvery *Paronychia capitata* var. *Kapela*. The ridge which stretches upwards towards the *Croix aux Béguines* (1,154 m.) has a very rich flora; for, in addition to most of the plants noticed the previous day on the Col de Bertagne are *Trinia glauca*, *Scorzonera austriaca*, *Leontodon Villarsii*, *Senecio Gerardi* (only known in France, and not unlike a green-leaved *S. Doronicum*), *Genista hispanica*, *Jurinea humilis*, *Thalictrum* sp. *Juniperus phoenicea*, and others. Sycamores attain about 1,100 metres, and at or near the rocks on the summit (1,150 m.) are *Pyrus Aria*, *Amelanchier vulgaris*, and *Aphyllanthus*.

Retracing one's steps through the forest there is a descent of about a mile through the *Forêt domaniale*, in which tall Beech trees are mingled in splendid profusion with Lime, Yew, Holly, and occasional *Acer opulifolium* (*A. Opalus* Mill.). *Martagon Lily* descends almost to the plain, and at the foot of the forest there is a belt of Oaks, Sycamore, Maple, Ash, and Lime, with Privet, Dogwood, and Spindle-tree in the boundary fence.

Between the old *Hôtelerie* and *Plan d'Aups* is a somewhat dull, level stretch of arid, barren land, three miles in length. The only plant not seen in the district before was *Nasturtium sylvestre*, which grows in the sandy bed of a small stream meandering across the wilderness.

Such is a very brief sketch of the phanerogamic vegetation of this picturesque district. No botanist finding himself at Marseilles, with a couple of days to spare, should fail to visit *Ste.-Baume*; and if he wants an account of the flora of this range he will find all he is likely to require in Dr. Mader's *Le Massif de la Sainte-Baume*, in "*Malpighia*," Vol. XX. (1906). *H. Stuart Thompson*.

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

VINES.—Let occasional applications of some approved Vine manure be given to early Vines from which the bunches have been cut. If the border has become hardened to any extent lightly fork over the surface before applying the manure. The manure should be watered well in, and sometimes it is necessary to apply water on two or three occasions, so that every part of the border becomes moistened, for it is imperative to retain the foliage in a healthy condition as long as possible. The Vines should be freely syringed, particularly in fine weather. Whilst watering liberally, take care that the border does not become saturated, as this would result in badly-ripened wood and soft, quill-like roots, which are liable to die before the Vines are again started. If from any cause the foliage has become scorched, the lateral shoots may be allowed to grow without being checked, as this will assist in the maturing of the basal buds.

GRAPES THAT ARE COLOURING.—Houses containing vines on which the Grapes are colouring must be freely ventilated, but the plants must not in any case be exposed to cold draughts. Assuming that the border has been regularly attended to as regards water, little or none should now be necessary. The surface should receive a covering of short manure or meadow hay, as advised in a former issue. The lateral growths should be pinched to one leaf as they appear. When this is not done, large quantities of growths have to be removed later, and in such cases this must be done gradually, or the check caused to growth will be ruinous to the Grapes, for in the case of varieties such as *Madresfield Court* and *Muscats* splitting of the berries would almost certainly result. Overcrowding of the foliage should be avoided, keeping only such leaves as can be fully exposed to the light and air.

FIGS.—Trees developing the second crop should be given manure water, and the border may receive another surface dressing. It will be advisable to thin out the shoots where they appear crowded. Let the foliage be kept in a healthy condition by vigorous syringing in fine weather. The crop must be thinned, if thinning has not already taken place. Fig trees in pots that were started late in the autumn will now be cleared of their second crop, and in favoured localities the trees should be stood outside in a sheltered position fully exposed to the sun. In colder districts they had better be given the shelter of some light structure, where, however, they should be exposed to light and air. They must on no account be allowed to become dry at the roots, and occasional waterings with liquid manure from the farmyard will be beneficial.

THE FLOWER GARDEN.

By A. J. COBE, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

LAYERING RHODODENDRONS AND AZALEAS.—Branches of *Rhododendrons* and *Azaleas* which have become straggly may be layered. Sever the branch partially and split the stem by an upward cut for a few inches. Make a small hole in the soil, and bury the cut portion, securing it with a strong peg, afterwards filling the hole with a mixture of peat and sand. Secure the branch to a stake to prevent it swaying, and see that the soil never becomes dry.

BUDDING ROSES.—The end of July and early August are generally the most suitable times for budding Roses, but the exact date is not so much governed by the calendar as when the bark "runs" easily in bud and stock. Recent rains have greatly benefited the stocks, and they will probably be in a good condition for taking the buds. Select plump buds from well-matured, flowering shoots, and just as they are ready to start into growth. In the case of dwarf

plants, insert the buds quite near to the roots, and bud standards close to the main stem, thus minimising the probability of numerous suckers developing.

FLOWER BEDS.—Give constant attention to the flower beds, that the plants may produce a bright effect quickly and thus have a long season of blooming. Remove faded flowers, dead leaves, and seed pods. Keep the surface soil stirred with the Dutch hoe until it is covered with the plants, and stake neatly subjects that require a support. Certain plants, such as *Verbenas*, *Phlox Drummondii*, *Ivyleaf Pelargoniums*, and *Gnaphalium microphyllum*, need their long growths pegged down, whilst *Pyrethrum* (*Golden Feather*) and others used as edgings should be pinched.

LAYERING BORDER CARNATIONS.—Carnations may be layered during the next fortnight, and the earlier the work is done, the better it will be for the future success of the plants. Prepare a compost of finely sifted loam, leaf mould, and sand; make a slight depression around the plants by lightly forking and drawing away the soil, and fill the cavity with some of the special soil. Cut out any weak growths in the plants to be layered, and in the shoots for layering make a suitable tongue with a sharp knife. After pegging the layers to the ground and covering them with soil, give the plants a copious watering, and continue to afford water in dry weather, sprinkling the foliage late in the afternoons of fine days. Beds in which the rooted layers are to be planted in early autumn may be prepared in advance. Thoroughly drained, loamy soil, that has been dug deeply and enriched with stable manure and lime rubble is suitable.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

GATHERING STONE FRUITS.—It is still the practice of some to allow fruits to remain upon the tree as long as they will, or even to drop from the shoots into nets, from the idea that they are then in their best condition and flavour. This is wrong, and for two or three days previous to the fruit dropping the flavour is actually declining, whilst such fruits become the more tasteless the longer they are kept before being eaten. The best time at which to gather the fruit is about three days before it would fall from the tree, as it is then in its highest state of perfection. There is certainly some difficulty in knowing the time when the fruit is in a proper condition for gathering, and the knowledge can only be got by close observation and experience. Never pinch a fruit in order to know whether it is sufficiently ripe, particularly the Peach, Nectarine, or Apricot; but, instead, let the hand be placed underneath and the fruit gently raised a little; if it is in a fit state for gathering it will part from the stalk immediately.

STRAWBERRIES.—Now that the fruit has been gathered, beds that are to be retained for another year should be cleared of the surplus runners, all weeds removed, and the surface soil flat hoed. Do not remove any foliage now in a healthy condition. If the crowns appear to be weakly or the plants have been overtaxed by carrying a heavy crop of fruit, the surface of the beds may be mulched with half-decayed manure and given two or three copious waterings with manure water or a surface dressing of artificial, well watering the beds afterwards.

APPLES AND PEARS.—The summer pruning of these must still have close and constant attention; not only espaliers, pyramids and bushes, but also standard trees, where possible, should be treated so that all superfluous wood may be removed. Those trees that are carrying light crops of fruit are making vigorous growth, and will, in all probability, require severe pruning at a later date. This may be done as soon as growth has ceased. Where the woolly aphid or American blight makes its appearance, treat the affected parts with an insecticide, well rubbing it in with a stiff brush. The application afterwards of pure linseed oil to the parts affected has its advantages, for the damaged tissues of the bark heal quickly after treatment with the oil.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq.,
Castleford, Chepstow, Gloucestershire.

RESTING ORCHIDS THAT HAVE FLOWERED RECENTLY.—*Laelia purpurata*, *L. grandis*, *L. tenebrosa*, many of the *Laelio-Cattleyas*, *Brasso-Cattleyas* and *Brasso-Laelio-Cattleyas* that have flowered recently should be placed in the cooler end of the *Cattleya* division until new growth begins. The ventilators immediately above the plants should be opened on all favourable occasions, and the surroundings kept fairly dry. Only sufficient water is needed to keep the pseudo-bulbs plump and the roots alive. Each plant should be examined for insect pests, especially scale. All loose sheaths should be pulled off and the tops of others examined, as scale often harbours in them.

ODONTOGLOSSUM CITROSUM.—When the plants have passed out of flower and the roots become active they may be repotted. Large receptacles, whether Teak-wood baskets or pans, are not required, but sufficient drainage should be provided to allow surplus water to pass away quickly. Firm potting is essential. The compost should consist of either *Osmunda* or *Al* fibre cut up moderately fine, and a sprinkling of chopped *Sphagnum*-moss. The plants will grow well in association with such subjects as *Laelia* aneeps, but if this is not convenient, choose a light position for them in the *Cattleya* house, preferably near to the roof-glass, and in close proximity to a ventilator. After root disturbance but little water will be needed for some time afterwards, but when the roots begin to penetrate the compost increase the amount of water gradually, keeping the plants well supplied with moisture until the pseudo-bulbs are matured. During the resting season the soil should always be on the dry side, until the flower scapes develop from the new growths. The back pseudo-bulbs may shrivel, but the grower need have no fear, for they will soon regain their rigidity when water is again applied more liberally.

COLAX JUGOSUS.—As soon as the plants of *Colax jugosus* commence to grow repot them in a mixture of loam, *Osmunda*-fibre and *Sphagnum*-moss, with a moderate sprinkling of crushed crocks added. Pans are the most suitable receptacles. Grow the plants afterwards in a light position in the intermediate house. The hybrid *Zygoclox Veitchii* will succeed with similar treatment. The young shoots are occasionally troubled with thrips; directly this pest is detected vaporise the house and dip the plants in an insecticide.

THE HOT-WATER SYSTEM.—The present is a suitable time to flush the hot-water pipes, attend to leaky joints, pack the valves where needed, sweep the flues and chimneys, and carry out repairs to the brickwork of the furnace. Such work as painting and repairing the wood-work of the houses may also be done now.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME,
Warter Priory, Yorkshire.

GLORIOSA.—If *Gloriosa* plants are growing in small pots, weak liquid manure should be applied at alternate waterings. Keep the shoots trained regularly to the trellis as they extend, and, as soon as the plants come into flower, grow the plants in slightly cooler conditions, in order that the flowers may remain fresh for a long period. When the foliage begins to die, let the soil become gradually drier, thus preparing the bulbs for resting through the winter.

CHRYSANTHEMUMS.—Plants that were sufficiently advanced to receive the final shift at the beginning of last month will now be making roots freely, and may be given manure water. It is better to commence with weak stimulants a month or six weeks after potting than to mix large quantities of manure with the potting soil as is often done. As to liquid manure, much harm is sometimes done by applying this in too concentrated a condition. There is, however, less danger when the manure water is made from horse-droppings with a little soot added, than from some of the concentrated fertilisers. The extent to which stopping is practised must be regulated by the form the plants are to assume.

In the case of the ordinary bush shape some half-dozen or more shoots are convenient, and bushes of this description prove suitable for decorations. Syringe the plants regularly as recommended in the calendar for June 26. At the present time cuttings may be rooted of large-flowered, strong-growing varieties to flower in 5-inch pots. Plants of this character come in most useful during the winter months. Strike the cuttings in small pots in a gentle botbed and shade them from bright sunshine. Syringe the foliage on bright days and when well rooted move them into 4 or 5-inch pots, using a fairly rich compost and potting the plants firmly. As soon as the pots are filled with roots liberal applications of liquid manure must be afforded.

TRACHELIUM COERULEUM.—Few grow the common Throat-wort in pots, and yet it is a most delightful plant, of easy culture for conservatory decoration. Seed may be sown now for raising plants to flower early next summer, or old plants may be divided as they pass out of flower or potted on if larger specimens are required. The plants do best if kept cool whilst growing and the roots fed liberally with manure water.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

PARSLEY.—The leaves of spring-sown Parsley should be picked rather hard for the next few weeks, and, if necessary, the foliage may be cut close to the ground at about the end of August, for sturdy leaves will stand the winter best. Hoe the ground frequently during the autumn, and dust the plants freely with soot.

WINTER GREENS.—Continue to plant winter crops as the ground becomes vacant, and keep a sharp eye for slugs. Curled Kale and Sprouting Broccoli may still be planted; as the season advances, allow a little less space between the plants.

SPRING CABBAGE.—The first sowing of spring Cabbage should be made within the next ten days. Choose an open situation where the ground is not too rich, and sow the seeds thinly in drills made at 1 foot apart. If the soil is dry, water it thoroughly before sowing the seed. Place a net over the seed-bed to keep birds away. Harbinger, Early Offenham, Flower of Spring, and Milecross Marrow are grown in quantities at Frogmore, where no fewer than 60,000 plants are put in August and September for spring supplies.

ASPARAGUS.—Some provision should be made at once to secure Asparagus growths from the effects of rough winds. For this purpose let a number of strong sticks be driven into the bed and wires extended along the rows to which the shoots may be tied. Keep the beds free from weeds and apply a light dressing of artificial manure during showery weather.

SEAKALE.—This crop will benefit by a dressing of artificial manure. Examine the crowns and remove all side shoots, leaving one or two crowns to each plant. Seakale will force much better in winter if water is supplied freely during the growing season. Keep the soil free from weeds by the frequent use of the Dutch hoe.

FRENCH BEANS.—If cold pits are available they should be filled with French Beans with as little delay as possible in order to furnish a supply throughout the autumn. The soil for this purpose may be enriched by a dressing of manure from a spent Mushroom bed, and after digging and mixing may be made moderately firm by treading. The seeds should be sown in double rows in the middle of each light, and the seedlings afterwards carefully thinned in order to admit light and air amongst them. So long as the weather continues favourable the plants may be left uncovered in order to keep them stocky. Slugs may be kept in check by the frequent use of lime. Apply water freely as soon as the plants are well through the surface, and by syringing in dry weather much may be done to keep the plants healthy and free of pests. Plantations should be made in slightly heated pits in the months of August and September at intervals of ten days.

EARLY POTATOS.—These should be lifted as soon as ready in order to prepare the ground for some winter crop, such as Turnips, Spinach or Coleworts. In the case of Turnips or Spinach, it is specially important to prevent any overcrowding, as the plants must have plenty of light and air.

ONIONS.—A sowing of some approved variety of Onion should be made on rich ground in an open situation early in August, sowing the seeds thinly in rows 18 inches apart. A second sowing should be made at about the middle of the month. Ailsa Craig, Golden Rocca and White Lisbon are good varieties for the purpose. Only a small quantity of White Lisbon should be sown, as the bulbs do not keep long after they are matured, but the plants are valuable for pulling in winter and spring.

CARROTS.—Carrots should be thinned as soon as they are large enough to handle, allowing 3 inches between the plants. Dust them frequently with soot. Make a sowing of Early Scarlet Horn on a warm border, for furnishing roots in October. If the soil is dry the drills should be carefully watered the evening previous to sowing.

TOMATOS.—Keep out-door Tomato plants free from side shoots and encourage the extension of the leading growth, which should be kept regularly tied into position. As soon as sufficient fruits have set to produce a crop the tops may be removed and supplies of stimulants given, either small applications of chemical manures or manure water from the farmyard.

RADISHES.—Seeds of Radishes may be sown in a cold pit in good rich soil. Apply plenty of water in order to insure quick growth.

THE "FRENCH" GARDEN.

By P. AQUATIAS.

CROPS IN FRAMES.—The Cucumber plants are well established, and most of them are showing young fruits on the laterals, which should be stopped at the second leaf. The work of ventilating frames and watering the roots should be regulated by the weather; extreme moderation is required in both cases. Shading the lights with limewash is now preferable to covering the glass with mats. Remove the lights from the frames in which Kidney Beans and Vegetable Marrows are growing, and stack them under cover for overhauling in the next few months. Beans are bearing freely, and should be watered with liquid manure to lengthen the fruiting period, as, owing to late frosts and the drought, Beans will not be available from out-of-doors in large quantities before August 20. Make a sowing of Beans for a late crop in beds made 4 feet wide, leaving a path 18 inches wide between each pair of beds, to enable the frames and lights to be covered at the flowering period late in September. The ground is sufficiently damp to ensure a quick germination of the seeds, but it may be necessary to water the plants if hot weather prevails again, as quick growth during August and early in September is essential to success.

CROPS IN THE OPEN.—The winter crops, such as Celery, Brussels Sprouts and Broccoli are well established. Keep the ground clear of weeds, and before the leaves cover too much ground dress the soil with a fertiliser. After this has been done the soil should be ridged up, either by hands or with the Planète Junior. Witloof Chicory is growing freely, and the plants should be thinned at an early date, for the more space allowed between each plant the better will be the roots for forcing. After the work of thinning and hoeing is completed very little attention will be needed until the lifting of the roots is done in October and onwards. Before the end of the present month sow Spring Cabbage and Onion White Lisbon. Where a large quantity of Cabbages is required make another sowing at about August 8. The seeds should be sown in drills. Onion White Lisbon should be sown, preferably, in drills to facilitate hoeing the soil. When ground is available a large sowing of Onions may be made. The germination of Onion seeds in July and August is not always a success, and ample allowance should be made for failures.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would oblige by obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

APPOINTMENTS FOR AUGUST.

TUESDAY, AUGUST 3—
Scottish Hort. Assoc. meet. Walsall Floral Fête (2 days).

WEDNESDAY, AUGUST 4—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Clematis, their Development and Cultivation," by Mr. A. G. Jackman.)

THURSDAY, AUGUST 5—
Burnham (Som.) Hort. Soc. Show.

SATURDAY, AUGUST 7—
Société Française d'Hort. de Londres meet.

MONDAY, AUGUST 9—
United Hort. Benefit and Prov. Soc. Com. meet.

TUESDAY, AUGUST 17—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "The Mustard Beetle," by Mr. Frederick Enock.)

THURSDAY, AUGUST 19—
Manchester and N. of Eng. Orchid Soc. meet.

TUESDAY, AUGUST 31—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "The Relative Values of Organic and Inorganic Manures," by Mr. F. E. P. Hodsoll.)

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 62.1.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, July 29 (10 a.m.): Bar. 29.4. Temp. 68°. Weather—Bright.

War Horticultural Relief Fund.

The Royal Horticultural Society has issued the appeal for funds in relief of the horticulturists among our Allies whose industries have been ruined by the war. The appeal is addressed to the Fellows of the society, and to all others interested in gardening. We urge upon our readers the claims of this fund upon their generosity, and shall be pleased to receive, acknowledge, and transmit to the treasurer of the fund donations or promises of donations.

To raise a sum at all adequate to the needs of Belgium, Northern France, and the other devastated areas will require the active co-operation of all sections of the community. That co-operation will, we believe, be forthcoming. Gardeners themselves will be sure to do all in their power to make the fund a success. The horticultural trade has also shown that it is prepared to assist both with money and in kind. The ladies of Great Britain are showing that this appeal for financial assistance on behalf of the distressed horticulturists is one which has their sympathy and support. They have, we believe, formed a powerful and representative committee, presided over by the Lady Northcote, and are now engaged in con-

stituting county committees, each under the direction of a county president, with the object of collecting subscriptions. The report of the R.H.S. commissioner to Serbia—which we publish on another page—shows not only that the need for help is great, but that the R.H.S. is determined to bestow the help which it is able to give in the most efficacious manner. It is too early, alas! to dispatch similar commissions to Belgium and Northern France; but the time will come when that will be possible. It is only by detailed enquiry in the countries themselves that the real needs and true deserts of those who have a claim on the fund may be ascertained. In this enquiry we may be sure that the Belgian and French Governments will assist. Hence, those who subscribe will have the certitude that their donations will be applied to constructive and fruitful ends.

Is it too much to suggest that such a fund as this has an especial claim on the generosity of loyal naturalised Britons of enemy origin? By rendering aid to those who have suffered from the ruthlessness of their some time compatriots they would have the deep satisfaction of knowing that they are helping to remedy somewhat the evil wrought by the enemy. But it is primarily to the native citizens of the Empire that this appeal is addressed, and we are confident that, in spite of the hard times through which we are all passing, the response will be liberal and universal.

Flowers in the Parks.

A correspondent writing to the daily Press urges, on the ground of public economy, that the "ornamental expenditure" upon flowers and shrubs in the public parks should be discontinued for the coming year. The correspondent contemplates that if the Government were to give such a lead, the municipalities would follow suit "without compulsion." We cannot foresee the lengths to which national economy may have to be carried, and it is possible that before our arms are crowned with victory we may have to follow the example of Vienna and plant vegetables in the public parks. But in the meantime, it would be sheer foolishness to grudge at this moment an expenditure which results in so much public profits as does that bestowed on the flowers and shrubs of the parks. They stand for symbols of peacefulness; the sight of them brings rest to tired minds. Those who have gardens of their own know that never did those gardens bring such refreshment to the spirits of man as they do now. They are the sure antidote to the incessant harassment of the special edition, and in them frayed nerves seek and find tranquillity and restoration. What wise man, therefore, would deny to those who have not gardens of their own the pure and abiding pleasure derived from the contemplation of the flowers in our public gardens! However the guides to opinion in the public Press may chop and change their ideas—now urging us to carry on our business as

usual, and next to do nothing of the kind—the fact remains that the great mass of the people have, as their main task and contribution to victory, to see to it that their routine work is carried out with equanimous mind and resolute fortitude.

Much help they can give and are giving: help to wounded soldiers, to the men at the front, to the Belgians, and so forth. On the attitude of the people in this war no reproach can be framed, and if it were not for the tumult and the shouting of the Press yet more might be made of the spirit of generosity and of sacrifice which has touched and ennobled the spirit of our people. Let us, therefore, not be robbed of the smiling companionship of the flowers of the parks. There is no present need to render our public places desolate. Why should we emulate the actor, who, in order to play the part of Othello, deemed it necessary to black himself all over?

R.H.S. "DIARY."—In the R.H.S. *Diary* for the present year a fortnightly show and meeting has been entered for Wednesday, August 18. This should be Tuesday, August 17.

WAR HORTICULTURAL RELIEF FUND.—Secretaries of flower shows are asked to assist the Fund by including the R.H.S. Letter of Appeal for promises of subscriptions in the Show schedules, or circulating copies of the appeal in the show grounds. Those able to help in this way are requested to make application to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, London, stating the number of copies they wish sent.

The committee of the Haywards Heath and Mid-Sussex Horticultural Society has decided to hold the annual show, and to devote the entire proceeds, after paying expenses, to the War Horticultural Relief Fund. No prize money will be awarded in the nurserymen's, gentlemen's gardeners' and amateurs' sections. It is proposed that the vegetables and fruit, with the permission of the exhibitors, shall be sent to H.M. fleet in the North Sea.

THE SWEET PEA SHOW.—A correspondent has addressed to us a communication in which he comments on the report of the National Sweet Pea Society's exhibition, printed on page 46. He notes that our reporter urged the society to do its utmost to investigate the streak disease with a view to finding means of controlling it, but goes on to say that the plants this season have exhibited comparative immunity from the streak disease. We accept our correspondent's statement that the disease is less rife than in recent years, but nevertheless plenty of instances of streak have been observed even this season. With the chance that the trouble may become more serious in the future, it is surely worth the serious attention of all interested in the flower. Our correspondent also points out that modern Sweet Peas are less fragrant than older varieties, and commends the society for having included at their last show a class for a bunch of Sweet Peas that was judged from the point of view of fragrance. The 1st prize for this class was won by Mr. HENRY STUART BARTLETT, and the variety he staged was one known as Mother o' Pearl, raised some years ago by Mr. ALDERSEY. The suggestion is put forward that by crossing the newest varieties back again upon the first breaks obtained by Mr. ECKFORD varieties possessing all the high qualities of modern flowers might be raised which would also possess the indispensable quality of fragrance. This matter is important, for the public will not con-

tinued to enthuse over Sweet Peas that are no longer sweet!

WAR ITEM.—We regret to learn that Sergeant ALEXANDER MACDOUGALL, of the Argyll Mountain Battery, head gardener to Mr. ALLAN, of Aros, Island of Mull, has been wounded in the face and right shoulder by shrapnel at the Dardanelles and is now in hospital at Cairo. Sergeant MACDOUGALL had been connected for a number of years with the Tobermory contingent of Volunteers, which was latterly merged into the Argyll Mountain Battery.

AMATEUR BERRY PICKERS.—Certain Glasgow school teachers having offered themselves for work during the holidays owing to the war conditions, their services have been secured for the Raspberry harvest on the Perthshire fruit farms. About four hundred have undertaken to act as berry pickers.

MARKET GARDENER OBTAINS £1,000 FOR PERSONAL INJURIES.—Some time ago an action was raised in the Edinburgh Court of Session by Mr. ALEXANDER BENNET, junr., market gardener, Gorebridge, Mid-Lothian, against the North British Railway Company for injuries sustained by a collision on the company's system. Mr. BENNET sustained compound fractures of both legs, and a considerable sum was claimed. The action has now been settled by the railway company making a payment of £1,000 and expenses.

LUCERNE SEED AND OTHER RUSSIAN PRODUCE.—The British Vice-Consul at Baku (Mr. A. E. R. McDONELL) reports that a business man at Baku desires to enter into negotiations with United Kingdom importers with a view to establishing a working arrangement for the supply of Lucerne seed and other Russian produce. Mr. McDONELL has been informed that the quantity of Lucerne seed harvested annually in Central Asia amounts to from 400,000 to 500,000 poods, the best quality coming from Khiva. Samples of this seed as well as of Worm seed have been received at the Commercial Intelligence Branch of the Board of Trade, where they may be inspected by United Kingdom firms interested.

GOODS SUITABLE FOR THE RUSSIAN MARKET.—An enquirer is desirous of getting into touch with United Kingdom exporters of goods for the Russian market with a view to acting as their representative. Correspondence may be conducted in English. United Kingdom importers and exporters interested in either of the foregoing enquiries should apply, in the first instance, to the Commercial Intelligence Branch of the Board of Trade for the name and address of the enquirer. Further communications regarding the enquiry should be addressed to the British Vice-Consulate, Baku.

ORIENTAL LILIES IN SOUTH WESTERN SCOTLAND.—The Rev. DAVID R. WILLIAMSON writes to us as follows from Kirk House, Kirkmaiden, N.B., on July 22:—"In this region of Scotland the Lily season has been redeemed from comparative failure by the advent of the recent beneficent thunder-rains. I find that in Logan Gardens, at Lochinch Castle, and elsewhere, *Lilium giganteum* has not attained to its normal strength and height, but will nevertheless in most instances make a fine display. The Countess of Stair informs me that many plants at Lochinch and Castle Kennedy which the long-continued drought had threatened to destroy have been greatly improved in aspect since my visit of three weeks ago by the abundant rains. This, I think, is especially realisable in such Lilies as *L. speciosum magnificum* and *S. Kraetzeri*, which usually are among the very latest to flower in autumn; but I greatly fear that *Lilium auratum*, and particularly its grandest representatives, *platyphyllum* and *virginale*, will not reach the same dimensions as in many former years. Here I am growing *Lilium*

auratum, *longiflorum* and *speciosum* in a miniature conservatory (where they are growing and flowering admirably), as the garden at Kirk House, though completely sheltered from northern blasts, is somewhat exposed to the influence of east winds, though not so much affected by them as I anticipated. I am glad, however, to record incidentally that my Roses (including such fine recent introductions as Lady Clanwilliam, Iona Herdmann, Majestic and Mrs. Wemyss Quin), my Sweet Peas and Antirrhinums, sheltered by a high wall and a Hawthorn hedge, and growing on a terrace with a sunny southern aspect, are perfectly secure and blooming far beyond my utmost anticipations. With regard to the present Lily season, I have only to add that my successor, the Rev. JAMES MACMORLAND, B.D., has every reason to be proud of his *L. Szovitzianum* and *L. candidum* in Kirkmaiden Manse Gardens, which are by far the finest I have seen this year."

PEACH GROWING SEVENTY YEARS AGO.—Being an old hand at Peach forcing, and not an unsuccessful one, I beg to throw out a few

good gardening, is without mystery, and when carried out, inexpensive in most places. One of the most important points in Peach growing is to get bearing wood. The border has a great deal to do with this, for when manure is liberally supplied to the border, or when the roots have a superabundance of moisture, caused by imperfect drainage, the shoots, under such circumstances, are not of that quality which gardeners distinguish as short, well-ripened bearing wood. The soil I have ventured to recommend laid upon a dry bed, as above detailed, will correct this redundancy of growth; but there is still another important point to be attended to, and that is the ripening of the wood thoroughly. First, then, no more shoots should be left than are required for next year's bearing, all others are only incumbrances, preventing the access of light to those which should be left as well as to the fruit. The pruning of a Peach house in autumn or winter ought to be a very simple operation, certainly unlike the thinning of a coppice, which the tree too frequently presents. *Extract from the Gardeners' Chronicle, July 26, 1845.*



FIG. 23.—PENTSTEMON JAFFRAYANUS: COLOUR OF FLOWERS REDDISH-PURPLE.

(See p. 68.)

hints which may be of service to those who may not have succeeded so well as I have done. First, then, the border is the battle field, and this should be formed with something like a physiological knowledge of the constitution of the tree itself when planted, more especially under glass. Its tendency to wear out or become sterile, its liability to accidents, and other incidental casualties attending all fruits grown in forcing houses, the production of shoots unfit for the production of fruit, the hatching of insects, to which this tree is especially subject, are a series of calamities which desolate Peach houses, and with which badly-formed borders have some connection. Drainage, then, of the most perfect kind is absolutely demanded. On no tree do the effects of bad drainage sooner manifest itself than on the Peach. No operation can be more simple, or of so much importance, as that of draining a Peach border; 9 inches of flints, stones, or brickbats, with under drains to carry off the water, will accomplish this. On this lay 18 inches of mellow loam, of a turfy nature, from a dry, healthy old pasture, without any manure, and the border is complete. This arrangement, like all others in

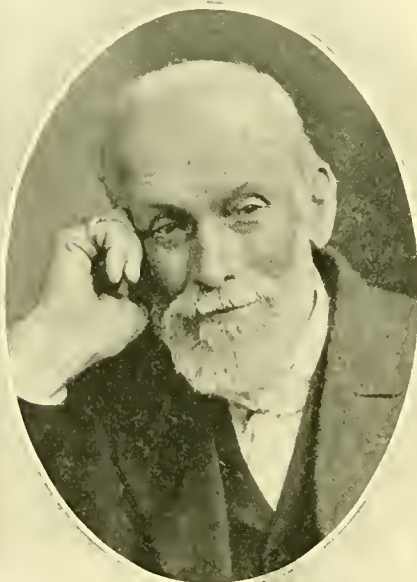
HAY FOR HIS MAJESTY'S FORCES.—In consequence of the erroneous idea which prevails in some districts that the military authorities intend to commandeer the stocks of hay in the country at whatever price they deem reasonable, and without regard to the amount required for use on the farm, the President of the Board of Agriculture and Fisheries desires to make known as widely as possible the policy of the military authorities in respect of the acquisition of hay. 1. The military authorities are ready to buy at its fair market value any suitable hay which is offered to their purchasing officers by the grower. 2. It is not the intention to acquire hay which is proved to be wanted for the use of the stock on a farm, and instructions have been issued to purchasing officers not to requisition hay actually required by a farmer for the use of his animals. Should any question arise on this point it is to be referred at once to the Forage Committee, who will take immediate steps to deal with it. 3. Soft meadow hay and clear Clover hay is not required as a rule for army purposes, but should seed mixture, Sainfoin, Lucerne, or upland meadow hay be

purchased by anyone before it has been offered to and refused by the military authorities, such Hay will be at once requisitioned. 4. In view of the short Hay crop this year, the military authorities have decided to reduce materially the quantity of Hay purchased in this country. This should insure an adequate supply of Hay remaining for farm stock and prevent inflation of prices, and it is possible that after the lapse of a few months the military authorities will not be large buyers in the home market at all. 5. Under the Army Acts, 1879 to 1915, any difference respecting the amount of payment when Hay has been requisitioned shall be determined by a County Court judge, but with the object of preventing the inconvenience which an appeal to the County Court may cause the Army Council have appointed for England and Wales a committee for the northern area and one for the southern area, for the purpose of hearing the views of the owner on the value of the Hay requisitioned from him, and the views of the district purchasing officer on the same. The committee in each case will give their opinion on the price which should be paid for the Hay in question, and this opinion the War Office will accept; but if the owner of the Hay is dissatisfied with the opinion of the committee which has considered his case, it is still open to him to apply to the County Court judge. 6. Each committee will consist of three members:—(1) A farmer selected from one of the Farm Produce County Committees of the area concerned, (2) a Hay merchant, and (3) an officer from the purchasing establishment of the War Office. The secretary to each committee is Lieutenant C. B. ROLFE, 64, Whitehall Court, London, S.W.

THE HANBURY MEDALLIST.—The Hanbury Medal, which was struck in 1881 to perpetuate the memory of that eminent pharmacognosist, DANIEL HANBURY, has this year been awarded to Mr. EDWARD MORELL HOLMES, F.L.S., the fourth Englishman to whom the medal has been awarded. Mr. HOLMES, who has been curator of the Pharmaceutical Society's museums since 1872, is generally recognised as the leading authority on medicinal plants, and is widely known as a contributor to the literature of materia medica and botany. He has for many years been an enthusiastic gardener, and visitors to his garden at Sevenoaks rarely leave it without carrying away some interesting plant. The garden contains an extraordinary number of plants for its size. Many rare British plants are grown there, including *Simethis bicolor*, *Cicendia pusilla*, *Lloydia serotina* and *Arabis stricta*. The cultivation of these plants was undertaken partly with a view to learning the conditions of their growth, partly so that when asked for information on a rare plant it might be possible to show a cultivated specimen. *Cotoneaster vulgaris*, *Tenarium Botrys*, *Sisymbrium Irio*, *Veronica spicata*, *Lithospermum purpureo-coeruleum*, *Carex depauperata*, *C. tomentosa*, *Ornithogalum pyrenaicum*, *Romulea Columnae*. Another object has been to cultivate and learn the requirements of medicinal plants, and the results of Mr. HOLMES' experiments in this department have been published from time to time. The garden, being above the road, is a very dry one, and to remedy this Mr. HOLMES has had inserted in the ground at intervals of about 20 feet several halves of paraffin barrels; in some of these water plants are grown in pots raised to a suitable level. Many members of the Pharmaceutical Societies abroad send to Mr. HOLMES seeds and plants for identification; if they happen to be rare and show any signs of life he distributes them to various botanical gardens and gets useful plants in exchange. Frequent observations have led Mr. HOLMES in late years to the study of insect pests. Noticing one day that the young inflorescence of *Aconitum Napellus* was blackened, and finding a grub at

work eating it, Mr. HOLMES decided to breed the insect, with the result that he found it to be a naturalised alien moth, *Plusia moneta*, only noticed in this country a few years previously. Space will not permit of more than a brief allusion to Mr. HOLMES' scientific achievements, but it should be mentioned that in conjunction with the director of Kew Gardens he acted as botanical referee for the last two editions of the British Pharmacopoeia. He is generally recognised as the premier authority on British seaweeds. He discovered the only fossil seaweed ever yet found, and for safety's sake he has had it mounted in a ring which he is seen wearing in the accompanying portrait.

ROMNEYA COULTERI.—Mr. H. ALDERSEY sends us a malformed flower of *Romneya Coulteri*, in which the six petals are united together to form a perfect bell-shaped, gamopetalous flower. The petals are so perfectly amalgamated that at first sight the flower was scarcely recognisable. Mr. ALDERSEY informs us that the flower was cut from a plant bearing large numbers of flowers of normal shape.



MR. E. M. HOLMES, HANBURY MEDALLIST, 1915.

ROBINIA KELSEYI.

ROBINIA KELSEYI (figs. 24 and 25) was introduced to this country from North America about 1901, and few more attractive flowering trees or shrubs have appeared since then. At the time of writing (mid-June) it is in great beauty, the branches being laden with clusters of bright rose-coloured flowers. Like all the *Robinias*, it is rather brittle and is ill-adapted for an open, wind-swept spot. It is perfectly hardy, and shelter from south-west gales, which are more likely to prevail whilst it carries its foliage, is perhaps preferable to shelter from the opposite quarter. It is easily propagated by grafting on roots of *R. pseudacacia*. Fig. 24 represents the full-sized but as yet unripened pods. In this condition they are remarkable and not without beauty, as they are thickly covered with red gland-tipped hairs. I remember seeing a small tree in Mr. Maurice de Vilmorin's garden at Les Barres so thickly laden with these red pods as to give quite a glowing effect. The origin of this *Robinia* has been rather doubtful, but it now appears that it came from the Allegheny Mountains. It is allied to *R. hispida*, but has smaller flowers and leaves, and is more tree-like in habit. W. J. B.

PENTSTEMON JAFFRAYANUS.

UNDER the name of *P. Roezlii* the plant illustrated in fig. 23, p. 67, namely *P. Jaffrayanus*, was exhibited at the R.H.S. Chelsea Show on May 18 last. The true *J. Roezlii* is a plant of more slender habit, with long narrow leaves and small, violet-coloured flowers about half an inch long. *P. Jaffrayanus*, on the contrary, is closely allied to *P. azureus*, and has oblong or oval leaves on the barren shoots, while those on the flowering stems are broadly ovate and glaucous. In general appearance and habit the plant resembles some of the forms of *P. Menziesii*, but differs in not having the woolly anthers and slightly serrate leaves of that species. The plant is of a shrubby nature, growing from 6 inches to 9 inches high, and bears large flowers of a reddish-purple colour, the unopened buds being tipped with buff. It is a native of the northern part of California, and occurs throughout the Sierra Nevada. It has withstood the winter well at Kew on a rocky ledge thoroughly well drained. Out-of-doors the plants bloom in June, but, like many of the *Pentstemons*, the flowers do not last long. W. J.

WAR HORTICULTURAL RELIEF FUND.

REPORT OF R.H.S. COMMISSIONER TO SERBIA.

DURING the spring of the present year (1915) evidence reached England that the state of Serbia was in many respects one of extreme gravity. Food was known to be scarce, disease was rife, crops were unsown; and of the peasant army which had succeeded in repelling the invading Austrians many had fallen, more had been stricken with disease, and there was hardly a man available to work on the land. Urgent need for help was emphasised by those in authority in this country, and hence it was that the R.H.S. undertook to play a part in sending immediate relief to our Serbian ally. It was unfortunately too late to send vegetable seeds, and the only courses open to the society were either to send a large sum of money or to despatch a commissioner to investigate on the spot the horticultural needs of the country. Of these alternatives the latter commended itself to the council of the society. Negotiations took place with the Royal Agricultural Society, and it was agreed that the two societies should together appoint a commissioner to investigate and report upon the horticultural and agricultural needs of Serbia. To this post I was appointed, and the sum of £500 allocated from the War Horticultural Relief Fund was set aside and earmarked for expenditure on strictly horticultural objects. I left England on April 18, and travelling by Paris and Marseilles, embarked on the "Ville de Ciotot" for Salonika. After touching at Malta, the Piræus, Lemnos and Dedeagatch, I landed at Salonika on the 29th, and left on the following day for Nish, where I arrived on May 1. During my tour through Serbia I received invaluable kindness and assistance from our British Minister, as well as from the Serbian authorities. On May 2 I met by appointment the Minister of Agriculture, who is honorary president of the Co-operative Union of Serbia, and Mr. Lozanitch, the acting president of this remarkable union. My experience in Serbia amply confirmed the information which I had received in London, namely, that this Co-operative Union is the most effective organisation in the country. I have satisfied myself that it is able, by means of its local committees which are scattered all over the country, to distribute seeds, implements, and other articles directly to the peasantry, and I may add that the Union has undertaken to distribute im-

partially to the peasants whether they are or are not members of the Union. It is interesting to record that the Co-operative Union is modelled on the Agricultural Organisation Society of Ireland, whose inspirer and president is Sir Horace Plunkett. I regard it as most fortunate that I have been able to make such an arrangement with the Union, for otherwise the task of rendering effective horticultural help to the Serbian peasants would be an impossible one. Salonika at present, the only port of entrance for goods, is in Greek hands, and the port is so congested that consignments to private individuals lie for months on the quays. By consigning goods to the Agricultural Union the Society has the absolute assurance that the steamer will be met by the Union officials, and that the goods will arrive at the distributing centre in Serbia without any delay.

As those who have followed the heroic struggles of Serbia know, that country is bounded on the north by the Danube and the Save, and on the west by the Drina. Southwards and eastwards from the banks of these rivers stretches a low and fertile alluvial plain. In time of peace this plain is planted densely with Corn and Maize. Now, except for a field here and there, it lies waste for lack of cultivators, implements, seeds and cattle. Rising from the plain to the southward are the foot hills, which occupy about the same breadth as the plain, i.e., some thirty miles. The wave of Austrian invasion swept over the whole of the N. and N.W. of the country, engulfed the plain, and penetrated into the foot hills. Thanks to the marvellous power of recuperation of the Serbian army, and the happy and mysterious arrival of munitions, it was flung back before it reached far into the hills. Of the invaded area the N.W. suffered most, nor is this to be wondered at when it is known that the Austrian army which operated in that district was composed largely of German-Austrians and Hungarians. The former have made good their title to infamy wherever they have operated, and the latter have a peculiar race hatred for Serbians.

This army carried out with a depraved docility the orders which it received to destroy everything. It is known that men of other nationalities who made up the rest of the army refrained from the excesses which marked the passage and stained the honour of the troops of the Central Empires. Of the atrocities perpetrated I shall not write, for in truth many of them could not be printed. No British mind could even conceive the bestial tortures which these troops practised on the Serbians. Evidence of their doings is in my possession. Much of it I have witnessed, and in proper time and place it will be put upon record. Spoliation, robbery, murder and torture were practised wholesale and in detail. All valuable property was carried off, and what could not be plundered was burned. Chabatz, the chief market of the N.W. and the second richest town in Serbia, was first shelled and then, after being entered by the Austrian troops, it was deliberately set on fire, and is now but a gaunt and blackened ruin. Of its inhabitants about 2,000 were killed and 3,000 taken away into captivity, and of their destination and fate nothing is known.

There can be no question but that the Serbian peasants need our pity and aid. Certain features of Serbian life help, however, in some small measure to alleviate the sufferings caused by the war. Of these features one is the reality and strength of the bond which unites the peasants in communities of families. As each son marries, the father builds him a small house, standing slightly behind the farmhouse, and so in time clusters of houses arise occupied by the peasant and his sons, and surrounded by the fields and orchards from which they all gain their livelihood. If misfortune overtake one member of the family community, that

member and his dependents look, and not in vain, to the rest of the family for assistance, and thus it is that the foundations of Serbian national life stand secure to-day although so sorely strained by the storm of war. In only a lesser degree the homestead exemption law is serving as a strong bulwark to the State. This law enacts that all buildings, land up to 6½ acres, a couple of cattle and the necessary farm implements are inalienable, exempt even from mortgage or seizure for debt.

Serbia, though of great potential mineral wealth, is to-day a country of small holdings. A 40-acre farm is accounted a large one. The fields are open and in strips, and the strips possessed by one owner may be scattered a mile or more apart. Beside the main crops, which are Maize and Wheat, the peasants cultivate small breadths of vegetables, and I am assured by the Co-operative Union that it is only for want of seeds that they do not grow more. This want has in the past been due to the isolation of Serbia, which isolation has been deliberately fostered by Austria. The peasants are strong and industrious, and with the advent of peace

been done in Serbia by the British doctors and nurses. Words fail me to express the admiration which I feel for the splendid devotion and superb organisation displayed by the British medical service in Serbia. I have to acknowledge a deep debt of gratitude to the military authorities of Serbia, without whose active assistance it would not have been possible to visit the devastated area, for in the greater part of it occupied by the military and returned refugees, no private supplies of food exist. The population has to rely for subsistence on the rations provided by the Government. My stay in the country was rendered endurable only by the constant use of a specific against vermin, discovered by Professor Lefroy, the society's entomologist at Wisley; and my return was made easy by the kindness of Sir Thomas Lipton, who gave me a passage home on his yacht. (Signed) W. J. Henman, J.P., R.H.S. Commissioner to Serbia.

THE FLOWERS OF MILTON.

(Continued from page 33.)

COWSLIP.

1. The yellow Cowslip and the pale Primrose.
Od. May, 4
2. With Cowslips wan that hang the pensive head.
Lycidas, 147.
3. I set my feet
O'er the Cowslips Velvet head
That bends not as I tread. *Comus, 897.*

CROCUS.

- Crocus and Hyacinth with rich inlay.
P. L. IV. 701.

See also Saffron.

CROWTOE.

- The tufted Crow-toe and pale Jessamine.
Lycidas, 143.

A name given to many British plants, but in Milton's time chiefly given to the wild Hyacinth.

DAFFODIL.

1. And daffodillies fill their cups with tears.
Lycidas, 150.
2. Pancies, pinks and gaudy Daffadils.
Comus, 851.

DAISY.

1. Meadows trim with Daisies pide.
L'Allegro, 775.
2. The Wood-Nymphs deckt with Daisies trim.
Comus, 120.

EGLANTINE.

- The twisted Eglantine.
L'Allegro, 48.

The name has been given to many different plants, but Milton's "twisted" seems to limit his Eglantine to the Woodbine or wild Honeysuckle. See Honeysuckle and Woodbine.

ELM.

1. They led the Vine
To wed her Elm; she, spoused, about him
twines
Her marriagable arms, and with her brings
Her dower, th' adopted clusters, to adorn
His barren leaves. *P. L. I. 215-19.*
2. Under the shady roof
Of branching Elm star-proof.
Arcades, 89
3. Against the rugged bark of some broad Elm.
Comus, 354.

EUPHRASY.

- Then purged with Euphrasy and Rue
The visual nerve. *P. L. XI. 418.*
- Euphrasy is a common English weed, and was much praised by the older poets as good for the eyes. It is now considered to be of no medicinal value.

(To be continued.)

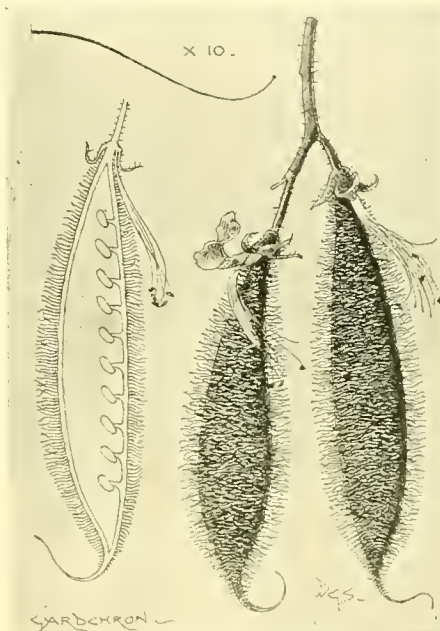


FIG. 24.—FRUITS OF ROBINIA KELSEYI.

(See p. 68.)

there will be a great opportunity not only of helping to restore their present cultivation, but of teaching them the uses of many crops now rarely grown, and I believe that out of the aid now to be rendered by the R.H.S. permanent demands for seeds and the like will arise. I have therefore recommended in my report that seeds for autumn and spring sowing should be despatched to Serbia. The following are those which appear to be at the moment most in demand, viz. :—Peas, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Carrots, Kohl Rabi, Spinach and Potatoes, particularly the early varieties. The Co-operative Union has agreed not only to undertake the distribution of the seeds, but also to make sure that the peasants are instructed by the local committees in the cultivation and use of those sent. Accompanying each packet of seed there should be printed, in English and Serbian, instructions giving brief cultural details.

During the six weeks which I spent in Serbia I visited practically the whole of the devastated area, and of the many indelible impressions engraved upon my mind, two stand out most vividly. One is the fineness of the Serbian peasantry, and the other is the work which has

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XXXVIII).

CORRESPONDANCE DE BRUXELLES.

La situation est très calme. Par suite du manque de forage dans les établissements de culture fruitière, l'égrenage des Raisins de culture ordinaire et retardée a entraîné des difficultés augmentées par l'absence des nombreux ouvriers compétents qui se trouvent sur l'Yser.

Les produits arrivent toujours à Bruxelles au moyen de camions, personne n'ayant recours aux trains que les Allemands font rouler. Par ordre de l'administration teutonne, des réunions de producteurs ont eu lieu le 27 juin et il a été porté à la connaissance des intéressés que si le chemin de fer continuait à être "boy-cotté," les gares seraient fermées pendant tout l'hiver et les envois de charbon arrêtés! Il en résulterait la destruction de la récolte tardive. Des carnets valables pour 10 voyages, revenant à 8 centimes en 3e et 12 centimes en 2de classe par kilomètre et par voyage, sont offerts.

Les fruits se vendent à très bon compte maintenant; le Raisin vaut (30 juin) 1 fr. 20 à 2 fr. le kilo, les Pêches 0 fr. 40 à 0 fr. 80 la caisse de 6. Les Tomates qui, au début, ont rapporté jusqu'à 1 fr. pièce, puis 5 à 6 fr. le kilo, parce qu'une seule marque (J.V.M.) était disponible en très faibles quantités, sont à des prix plus abordables. Elles font cependant encore 0 fr. 80. Dans une de mes premières correspondances, je vous ai annoncé que d'aucuns coupaient leurs vignes pour établir des cultures de Tomates et de Melons; pour autant qu'on peut se faire une opinion maintenant, ceux là n'auront pas fait un mauvais calcul.

Les légumes ordinaires ne sont pas chers non plus. Pommes de terre 13 à 15 centimes le kilo, petits Pois 30 centimes, Carottes 25 centimes, etc.

Il est excessivement difficile maintenant de vous faire parvenir des correspondances, mais avec un peu de retard nous nous tirerons d'affaire. J'enverrai une note détaillée sur la situation chez les maraîchers et fleuristes. G. M.

"LA QUESTION DE L'OCCUPATION DES BELGES."

Monsieur le Rédacteur en chef du *Gardeners' Chronicle*.

Au risque d'abuser de l'hospitalité de votre estimée publication, je me permets de vous demander de bien vouloir insérer ces quelques lignes. Nous savons bien, les Belges, que le *Gardeners' Chronicle* est le *Times* de l'horticulture, le premier journal horticole du monde, mais qui eût pu prévoir l'influence qu'a acquise la page française publiée régulièrement dans votre intéressante revue? Mon article du 10 courant, sur l'occupation des Belges, cette question d'actualité brûlante, m'a valu à mon adresse particulière, ainsi qu'aux Royal Nurseries à Maidstone, nombre de lettres et de demandes de renseignements, que je donne avec plaisir. Je profite de l'occasion pour remercier sincèrement les personnes qui ont bien voulu me donner des preuves d'encouragement.

L'Autorité Belge, dans une lettre datée de Londres, déclare que mon projet est très intéressant et qu'il mérite qu'on s'y arrête. Le Local Government Board m'informe que pour le moment il est inopportun de prendre les mesures suggérées. L'initiative privée, qui a réalisé tant de choses en Angleterre, pourrait prendre le projet à coeur. Le *Gardeners' Chronicle* et la "Royal Horticultural Society" me semblent parfaitement qualifiés pour lui

accorder leur patronage. Leur intervention serait d'un effet moral considérable, et faciliterait largement la coopération belge. Les résultats permanents qui seraient obtenus par la mise en exécution du projet rappelleraient plus tard cette oeuvre créée par des Belges sur le sol hospitalier de l'Angleterre et constitueraient un lien de plus entre nos deux nations. Qui veut aider? L. Jacobs.

NOUVELLES DIVERSES.

LES CULTURES PRÈS DES TRANCHÉES.

Suivant l'*Irish Times*, les Allemands auraient mis en culture le long de la ligne de bataille en Flandre et en France, 200,000 hectares de terres abandonnées par les exploitants. Cent mille hectares auraient été plantés en Pommes de terre. Les travaux sont faits par des militaires détachés aux "fermes" et par d'autres soldats envoyés au repos. Les Allemands prévoient une récolte totale de Pommes de terre de 2,500,000 tonnes soit 25 tonnes à l'hectare. Tenant compte des conditions dans lesquelles ils travaillent, on avouera qu'ils sont assez gourmands. Remarquons que derrière les lignes des alliés la ténacité et le patriotisme des cultivateurs sont tels que l'armée ne trouverait pas de terrains laissés en friche. Jusqu'à peu de distance des tranchées de première ligne, tout est en culture, les paysans montrant un sang froid étonnant pendant que les obus passent en sifflant au dessus de leur tête. Ils n'est pas rare d'en voir occupés à niveler le terrain qui vient d'être bouleversé par l'éclatement des obus! Le travail se fait souvent la nuit. La population se terrant lorsque l'artillerie ennemie semble viser plus particulièrement sa résidence. Et détail intéressant pour les lecteurs d'un journal horticole, les tranchées elles-mêmes sont transformées en jardins fleuris. Au prix de mille difficultés, souvent sous les balles, des soldats sont allés chercher les touffes de fleurs croissant autour des fermes détruites et les ont plantées dans les creux qui leur servent d'abris. Certains de ces jardinets sont entretenus avec un soin qui pourrait rendre jaloux bien des amateurs. Et nos héros, aux heures d'accalmie, se reposent des fatigues du jardinage en envoyant quelques pruneaux à l'ennemi retranché à cinquante mètres de là.

L'APPROVISIONNEMENT DE LÉGUMES À PARIS.

—Le comité de l'Alimentation de Paris, fondé par le préfet de la Seine au début des hostilités, signale dans son rapport que la mobilisation du plus grand nombre de maraîchers et ouvriers agricoles devait avoir une fâcheuse répercussion sur la production des légumes. Une certaine hausse est inévitable, affirme le Comité, le public doit la prévoir et l'accepter patriotiquement, comme les autres conséquences de la guerre. Cependant, la production est encore considérable et il serait facile de limiter cette hausse au moyen de certaines mesures d'ordre.

LIGUE DE PROPAGANDE POUR L'EMPLOI DES PRODUITS HORTICOLES.

—L'association des horticulteurs professionnels anglais a récemment créé une ligue en vue de pousser à la consommation des fruits et légumes. Les commissionnaires et détaillants se sont déclarés favorables au mouvement qui se manifestera par la distribution de brochures, l'apposition de nancartes dans les trams, les magasins, enfin la réclame directe par la voie de la presse. Il semble que pour ce qui concerne les légumes il

y a un vaste champ d'action pour la ligue, car si la consommation anglaise de fruits est énorme, beaucoup verraient avec plaisir un menu plus varié et plus abondant de légumes. L'initiative est certainement très intéressante et mériterait d'inspirer les producteurs du continent, où l'emploi de fruits et de fleurs pourrait être plus abondant. Pouvons nous nous attendre par exemple à une ligue de la fleur à la boutonnière ou, comme diraient les Anglais, une ligue de la boutonnière?

EXPOSITION DE ROSES À BOSKOOP.—La Ligue Pomologique néerlandaise a organisé une exposition de Roses, les 15 et 16 juillet à Boskoop. Cent quarante variétés, obtenues au cours des cinq dernières années, y étaient présentées. La plupart, suivant la liste que nous trouvons dans *De Tuinbouw*, sont familières aux habitués des expositions de Vincent Square. La qualité des fleurs était excellente et l'assistance très fournie.

COMMERCE HORTICOLE EN HOLLANDE.—La direction de l'Agriculture néerlandaise publie le tableau du commerce d'importation et d'exportation pour ce qui concerne les produits horticoles en Hollande. Pendant le mois de juin, la Belgique a pu lui envoyer 134,800 kilos de plantes vivantes. L'Angleterre a fourni 170,100 kilos d'Oignons. L'exportation a surtout été active vers les Iles Britanniques et l'Allemagne. Ce dernier pays a reçu 2,787,100 kilos de Fraises, 1,361,800 kilos de Cerises, 1,696,800 kilos de Groseilles à maquereau, 1,415,400 kilos de Choux-fleurs, 1,174,700 kilos d'Oignons, 13,653,700 (?) kilos de Concombres et Cornichons, 154,000 kilos de Tomates, 1,525,400 kilos de Carottes et 6,661,200 kilos de produits horticoles divers. Pendant le mois de juillet, la demande pour l'exportation a continué d'être très ferme. Les Pommes de terre à Loosduinen ont fait, du 15 au 20 juillet, une moyenne de 15 à 20 fr. les 100 kilos. Ainsi qu'il avait été prévu, les envois diminuent déjà, tout le monde s'étant hâté de profiter des hauts prix offerts au début de la saison. Les Concombres de serre valent 12 à 15 fr. le 100, de chassés 7 à 12 fr. les Tomates 60 à 80 fr., les Oignons 18 à 20 fr., les Fraises 40 à 50 fr.

NOUVELLES DE LA GUERRE.—M. G. Bazin, ancien élève de Versailles, rédacteur au *Moniteur d'Horticulture*, a été tué en Argonne; M. Jules Rudolph, collaborateur au *Jardin*, est décédé à son dépôt d'une congestion pulmonaire.

KORT OVERZICHT VOOR DE VLAMINGEN.

Rond Brussel is het knippen der druiven met moeielijkheden gepaard gegaan daar bij gebrek aan vroege teelt alles te gelijk moest gedaan worden en veel bekwame werklieden zich op den Yser bevinden. Het fruit is goedkoop.

De kweekers worden door de Duitschers afgedregen: zoo ze zich niet van de treinen bedienen, zal geen steenkool mogen vervoerd worden.

M. Jacobs, wiens voorstel we over drie weken bespraken, doet een oproep opdat men het in uitvoering bringe. In Vlaanderen is het wonder hoe de akkers tot onder het vijandige vuur bewerkt worden. In de loopgrachten hebben de soldaten op vele plaatsen bloemtuinen aangelegd.

In Londen is eene vereeniging gesticht met het doel de bevolking tot een grooter verbruik van fruit en groeten aan te zetten.

HOME CORRESPONDENCE.

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

NOVELTIES AT R.H.S. SHOWS.—May I ask the hospitality of the *Gardeners' Chronicle* for the purpose of suggesting to the Council of the Royal Horticultural Society that in future both at the fortnightly meetings and at the big shows a table should be set apart for the plants and flowers sent up to the Floral Committee for certificates, and an official told off to see that they get there directly the Committee has finished its sitting? By this arrangement the plants would not run the risk of being left unprotected behind doors or in passages as is the case now; and the Fellows would be able to see them without being distracted by all sorts of other flowers, which is what happens when they are put back in the midst of some large nursery exhibit. They would, moreover, be able properly to appreciate the taste and discrimination with which that august body of their representatives distribute its awards. *E. J. P. Magor, Lamellen, St. Tudy, Cornwall.* [See *Gardeners' Chronicle*, June 26, 1915, p. 358.—Eds.]

AMERICAN POND-WEED.—If Hooker was right in fixing the date of this plant's introduction about 1841, it certainly was not the Cambridge Professor of Botany who was my father. The tradition was, when I entered Christ's College in 1854, that Mr. C. C. Babington, Fellow of St. John's, and author of the *Manual of British Botany* (1856), introduced it into the Botanic Gardens, and that thence it found its way into the Cam. It was abundant in that river when I rowed, but not very troublesome till the long vacation; and it seemed to die down before the October term. Attributing it to him, some undergraduate dubbed it *Babingtonia inferna!* *George Henslow.*

NATIONAL DIPLOMA IN HORTICULTURE.—Under this heading in your last week's issue you give the address of Wm. Stewart as "Oakleigh Bishopsworth, near Bristol." Is this a printer's or examiner's error, as my address is The Gardens, Industrial School, Desford, near Leicester? *Wm. Stewart.* [We printed the official communication.—Eds.]

RAMBLER ROSES.—The supplementary illustration issued with the *Gardeners' Chronicle* for last week of three Rambler Roses was much appreciated. They are varieties that never fail in any garden. They possess the necessary attributes of true climbing Roses. Vigorous growth, good foliage, freedom of flower, comparative immunity from pests, and easily kept in flowering condition from base to apex. I have never seen Blush Rambler, American Pillar, or Mrs. F. W. Flight attacked with aphids, which for the amateur is of the utmost importance. Blush Rambler and American Pillar will throw up sucker-like growths every year, many of them reaching 14 feet. From such shoots the finest crops of flowers are obtained. *E. M.*

AUSTRALIAN BOTTLE BRUSH (see p. 58).—It may interest your correspondent to know that I have a bush of *Callistemon lanceolatus* (*Metrosideros floribunda*) on a south-west wall with 13 large blooms on it. This is its third season, and it has grown from a small plant to a bush 5 feet high by 4 feet wide, with no protection beyond a mat in frosty weather. The last two winters have of course been mild, but we have had an unusually long spell of east winds in the spring, which are more trying than frost to plants in this district. I think that if it will stand our climate it is more hardy than people imagine. When in full bloom it is certainly very handsome and well worth growing. *R. E. Peake, 6, Montpelier Row, Blackheath.*

LATE BUMMER-FLOWERING SHRUBS.—Sir Herbert Maxwell might have added to the list of July-flowering shrubs (p. 40) the following species which are in bloom here now—July 23:—*Genista aethnensis*, the Mount Etna Broom, 20 feet high, a shower of gold, and *Cytisus nigridus* Carlieri; *Notospartium Carmichaeliae*, 10 feet, a mass of pink; *Escallonia pterocladon*, just over,

but the bushes, 15 feet high, have been very effective; *Cassinia fulvida*, better in bud than in flower; *Lomatia ferruginea*, 12 feet, has flowered best on its north side; *Plagianthus Lyallii* is full of flower; *Stuartia Pseudocamellia* has flowered for the first time here; *Magnolia Soulangeana* seems about the latest *Magnolia*, at least it is only now in bud, several other varieties are nearly over. Among the *Hydrangeas*, *H. petiolaris* clings like Ivy and reaches to the roof, and deserves special mention as flowering the whole summer. Also on the house are *Ceanothus Gloire de Versailles*, *Jasminum officinale* and *J. fruticans*, *Solanum jasminoides* and *Berberidopsis coralina*. Sir Herbert does not mention Roses, but they are at their best here now. *Robert Birkbeck, Kinloch Hourn, Inverness-shire.*

THE FRUIT CROPS (see Supplement *Gard. Chron.*, July 24).—Since your returns of the fruit crops were collected strong winds have prevailed throughout nearly the whole country on two or three occasions, blowing large quantities of Apples off the trees and causing many breakages of branches of Plum trees, heavily loaded in some districts with fruit. It is to be noticed that from Kent, which is vastly more important as a source of market Apples than any other county, there are three average returns, only one over, and four under average; also that for Plums, which are very extensively grown in Kent, only two returns are average, while six are under and not one is over. You call attention to the fact that the complaints of the most serious damage to Apples from the aphids are from southern counties. I am informed that in Kent orchards generally the deplorable condition of the trees, owing to the infestation, is similar to that of which I am the victim. I believe that the reason why I am usually an exceptionally great sufferer from aphid attacks is that my place is practically exempt from spring and summer frosts. Since I have been in my present locality, over fifteen years, frost has never injured my Apples to the slightest extent, while only once, and then slightly, has it injured Plums or Currants. For this immunity I have to pay in the exemption of aphides from destruction by frost, which gets rid of vast numbers of the earliest viviparous females where it occurs with even moderate severity after they have appeared. Last year my fruit crops all round were very abundant. This year they will be mostly very meagre. Enough Apples set for quite an average crop; but the aphids has spoilt more than half, except on mature trees of the more sturdy varieties. Hundreds of trees of dessert varieties, five to seven years from the planting, will not produce a gallon of full-sized fruit each, while many will not yield any marketable fruit at all, in consequence of the aphid infestation, against which spraying was useless. *A Southern Grower.*

—The counties of Kent, Hampshire, Sussex and Dorsetshire appear to have suffered worse from aphid attacks upon Apples than any other. In my case I never saw the trees so badly crippled as they are this season; indeed, I should not be surprised if some of them die, so adversely is the foliage affected by the attacks of the purple aphids; even where spraying was rigorously done the effect is the same. My experience confirms the conviction that winter spraying has no effect upon aphid attacks in May. Here we had but 0.11 inch of rain from May 20 to June 24. During this period we had many cold sunless days, which is all in favour of the spread of aphids. It is strange how this pest attacks trees in one garden while those in others close to be immune; indeed, in the same garden there are unmolested trees. I note also that branches in one tree are quite free from aphids, the foliage clean and the fruit swelling normally, while three parts of the tree is scorched and the fruit at a standstill. Plum trees are quite clean, the foliage vigorous, the medium crop swelling satisfactorily, and fortunately they have not such heavy crops as last year to develop. Strawberries have done well on the whole in well-managed fields. The season was shorter owing to drought, but prices have been good,

which is an equivalent to a heavy crop, meaning less expense to the grower. *E. M., Hants.*

R.H.S. AWARDS TO ROSES.—The Royal Horticultural Society has given several recent Awards of Merit to single Roses. I do not condemn single Roses; in their way they are very beautiful, but I see signs of this type being very much overdone. The production of such Roses is a matter of the greatest ease, and single seedlings can be readily raised in enormous quantities. What steps are the Floral Committee taking to make sure that the single Roses it distinguishes with its Awards are worthy of a place in commerce? The mere staging of flowers, no matter how attractively this may be done, at one of the fortnightly meetings of the Royal Horticultural Society is not sufficient, and no member of the Floral Committee can possibly determine the character of the seedling set before him from cut blooms only. Single Roses should be tested by trial at Wisley or elsewhere. In no other way can those qualities which determine merit be arrived at, and I think it is absurd to grant Awards of Merit on the present basis to such flowers. It is making this Award very cheap, and easily earned; raisers of seedling Roses bearing double flowers of exquisite refinement are placed on an equal level with raisers of a type of flower that is procurable in enormous numbers with the greatest ease. There are some very beautiful single Roses, varieties that flower freely, that have ideal habits for garden purposes, and whose blooms neither fade nor require dressing. These qualities, however, were not ascertained on the show bench, but were determined in trial under garden conditions. I hope to see no awards given to seedling Roses, no matter what type, until the Floral Committee has seen them growing. Such a wish is neither unpractical or unbusinesslike—it is the opposite. The modern demand is for "garden Roses," and I respectfully submit that the necessary qualities of such Roses can only be ascertained in "garden" conditions. The old order, however, so far as "Awards of Merit" are concerned, is gradually changing. Circumstances have forced the Royal Horticultural Society to insist upon trials at Wisley of many things before any honour can be given, whereas in earlier days the simpler method of staging the object before the Floral Committee was deemed sufficient. This change is as it should be, but why should Roses—especially "garden" Roses, which are evidently so easily raised—be an exception? It is the simplest thing in the world to raise new Roses and stage them before the Floral Committee in an attractive manner. One of the most difficult things is to raise new Roses, send them to Wisley, let them grow there for a season, and convince the authorities that the seedlings are superior to the tried sorts now in commerce. *George M. Taylor, Midlothian.*

A TOMATO FRUIT ROT.—An account of a fungus, *Phoma destructiva*, causing fruit rot in Tomatoes, is given by CLARA O. JAMIESON in the *Journal of Agricultural Research* (Vol. 4, No. 1, Washington). The symptoms of the disease are dark spots on the fruit. The spots occur on both green and ripe fruit, and measure from 1 to 3 cm. (half inch to one inch) in diameter. They are brownish-black in colour, of definite outline, and on the surface small dark pustules may be seen. On ripe fruits the spots are surrounded by a more or less watery-looking zone. The fungus causing the disease has been isolated, cultivated in artificial media, and used to inoculate both fruit and leaf of the Tomato. Punctured fruits are readily inoculated with the disease, and leaves may be infected by distributing the fungus on their surfaces; as a result dark patches appear at the points of inoculation. The fungus may also be caused to infect Potato leaves, though attempts to infect tubers have not been successful. The pest has been identified with *Phoma destructiva*, first described in 1881 in the *Gardeners' Chronicle* (n. s. Vol. 16, No. 411, p. 620). *K.*

SOCIETIES.

ROYAL HORTICULTURAL TRIALS AT WISLEY.

A trial of Perennial Poppies will take place at the Royal Horticultural Society's Gardens, Wisley, during 1917.

A trial of spring Cabbages will also take place during the coming season. Seeds of all varieties which it is desired should be tried should be sent immediately to the Director, R.H.S. Gardens, Wisley, Ripley, Surrey, from whom forms of entry may be obtained.

NATIONAL CARNATION AND PICOTEE (SOUTHERN SECTION).

JULY 22.—There was a poor attendance at the annual show of the National Carnation Society at Vincent Square, and in many classes, due partly to the lateness of the season, exhibitors were fewer than usual. Mr. J. DOUGLAS again won the first division aggregate cup, and Mr. J. A. FORT was the winner of the cup in the second division. The Martin Smith Memorial Challenge Cup and Medal, offered for the highest aggregate in the third division, was won by Mr. E. W. PAINTER.

FLOWERS ON CARDS.

In the classes for selfs and fancies—the most decorative of this section—there was only one exhibitor. Mr. JAMES DOUGLAS, Great Bookham, was awarded all the first prizes. His blooms in the uncontested classes were the best, and here he had flowers of Mrs. Henwood, Miss Elizabeth Shiffner and Bookham White (selfs), Lord Steyne, Mona and Linkman (fancies). The Bizarres and Flakes were all of very moderate quality—the ground colour was poor and the stripes irregular and in most cases washy. The best blooms were Recorder, Sarah Payne and Claude Lorraine. Of his twelve white-ground Picotees, Fair Maiden, Mrs. Chaundry and a rose-edged seedling were the best, whilst chief amongst the yellow-ground varieties was Niel Kenyon.

FLOWERS IN VASES

In four of these classes, which required three blooms of distinct varieties in separate vases, Mr. JAMES DOUGLAS won the first prize and Mr. H. LAKEMAN was second. As a rule, the flowers were good and much more attractive than in the preceding classes, but three blooms arranged in a large vase with a superabundance of foliage and unopened flower-buds look sparse and unsatisfying to any of the visitors other than those of the old school.

Of Mr. DOUGLAS's blooms the following were especially noteworthy: Pink Clove, Cardinal and Bookham White (selfs), Pasquin and Edenside (fancies), Othello and Mrs. Owen (white-ground fancies), Togo and Mrs. J. J. Keen (yellow-ground Picotees).

Mr. LAKEMAN also had many beautiful blooms, and especially of Thomas a'Beckett (fancy), The Nizam (white-ground fancy), and Mrs. J. J. Keen (yellow-ground Picotee).

In the larger class, requiring nine varieties of selfs, fancies and yellow-ground Picotees, three blooms of a variety in each vase. Messrs. DOUGLAS and LAKEMAN were again first and second in the order named. Mr. DOUGLAS had an excellent exhibit of such sorts as Bookham White (self), Elizabeth Shiffner (apricot self), and Liberte (yellow-ground fancy Carnation). Of Mr. LAKEMAN's set Mrs. George Marshall (self) and Thomas a'Beckett (fancy) were of outstanding merit.

AMATEURS' CLASSES.

Flowers on Cards.—Six blooms of distinct varieties were required in each of the five classes. Mr. H. A. TAYLOR, Cheam, was the chief first-prize winner, and he showed very creditable collections, especially of self Carnations, which were worthy of high praise, such sorts as Tubal and Daffodil being excellent. Of his fancies Lord Steyne and Mrs. Leo Hunter were especially good, whilst of the six yellow-ground Picotees the very best were Eclipse and John Ruskin. Mr.

J. FAIRLIE, Acton, showing fine blooms of such as J. S. Hedderley and Gordon Lewiss, won the first prize for bizarres and flakes, and Mr. J. J. KEEN, Southampton, with especially good examples of Clytre and John Smith, was the most successful exhibitor of white-ground Picotees, in which class Mr. TAYLOR was second, and his outstanding bloom was of Clytre. Mr. J. A. FORT, Winchester, who included a delightful flower of Fujiyama, won second prizes for selfs, fancies and yellow-ground Picotees. Mr. KEEN was awarded 2nd prize for bizarres and flakes.

Flowers in Vases.—In the amateurs' division

Droitwich, by Mr. FROSTICK. The 1st prize for three blooms each of six varieties of selfs, fancies and yellow grounds was won by Miss E. SHIFFNER, Lewes, who included excellent flowers of Rosy Morn and Cardinal. Mr. J. A. FORT won the 2nd prize.

There were 13 classes for the smaller growers. Mr. E. W. PAINTER, Brentford, won the three 1st prizes for 6 varieties of selfs, fancies and yellow-ground Picotees with admirable exhibits. His blooms of Etna, Hildegard (selfs), Skirmisher, Sam Weller (fancies), Exquisite and Ophir (Picotees) were excellent. He also won



FIG. 25.—ROBINIA KELSEYI FLOWERING AT KEW.

(See p. 68.)

the classes for flowers shown in vases were what may be termed colour classes, and each of the ten required three blooms of one variety in a vase. The 1st prize varieties were:—*Pink or Rose Self*, Mrs. R. P. Smith, by Miss E. SHIFFNER. *White Self*, Bookham White, by Mr. FROSTICK. *Dark Red or Maroon Self*, Mrs. George Marshall, by Mr. F. E. GRAY. *Yellow Self*, Daffodil, by Mr. GRAY. *Red or Scarlet Self*, Fujiyama, by Mr. R. MORTON. *Yellow-ground Picotee*, Onward, by Mr. R. MORTON. *Buff Self*, Elizabeth Shiffner, by Mr. FORT. *Any other Self*, Irma, by Mr. MORTON. *Yellow or Buff Fancy*, Pasquin, by Mr. MORTON. *Any other Fancy*,

1st prizes for 3 white selfs, 3 yellow-ground fancies, and 3 yellow-ground Picotees with equally good blooms. Mr. A. CHARRINGTON, Oxted, showed the best 3 vases of rose selfs and of fancies other than yellow ground.

OPEN COMPETITIONS.

These 10 classes, which each required 9 blooms of distinct varieties of stated colour, were the most decorative in the show, the number of blooms lending themselves to artistic arrangement. Unfortunately, although the flowers were all of great merit and skilfully arranged, the competition was very limited. Mr. H. LAKE-

MAN and Mr. J. DOUGLAS shared all the 1st and 2nd prizes, Mr. LAKEMAN winning six and Mr. DOUGLAS four 1sts. Of Mr. LAKEMAN's delightful flowers those of Mrs. George Marshall (very large crimson self), Daffodil (yellow self), and Bookham White were especially worthy of mention, whilst Mr. DOUGLAS had equally admirable flowers of Innocence (pink self) and Fujiyama (scarlet self).

The five classes for seedlings raised by the exhibitor were very disappointing, one 2nd prize only being awarded.

PREMIER FLOWERS.

Flowers on Cards.—Bizarre, Master Fred, by Mr. J. J. KEEN; Flake, Gordon Lewis, by Mr. J. FAIRLIE; self, Tubal, by Mr. H. R. TAYLOR; Picotee, Eclipse, by Mr. J. J. KEEN.

Flowers in Vases.—Self, Bookham White, by Mr. H. LAKEMAN; fancy, Lord Steyne, by Mr. J. DOUGLAS; white-ground fancy, Othello, by Mr. DOUGLAS; heavy-edged Picotee, Togo, by Mr. R. MORTON; light-edge Picotee, Onward, by Mr. J. A. FORT.

MIDLAND CARNATION AND PICOTEE.

JULY 23, 24.—This Society's twenty-fifth annual exhibition, held at the Botanical Gardens, Birmingham, on the above dates, was very much smaller than usual, due principally to the fact that the season is a backward one, and to the show being held a week earlier than last year.

Messrs. A. R. BROWN, LTD., were the most successful all-round exhibitors, and Mr. R. BRUCE WAITE is to be congratulated upon his successful debut into the large open classes, and in carrying off the Bronze Medal offered to the second-best exhibitor. Mr. C. H. HERBERT secured four of the eight premier awards offered for dressed flowers on cards.

The only contestants in the Second Division (amateurs) were the Rev. C. A. GOTTWALTZ, Mr. T. M. TRANTER, and Mr. A. H. BIRCHLEY. In other divisions notable successes were achieved by Mr. F. WOODWARD, Mr. E. KENWRIGHT, and Mr. A. J. HILL.

FIRST DIVISION (OPEN).

FLOWERS SHOWN ON STANDS.

Twelve Self Carnations.—1st, Messrs. A. R. BROWN, LTD., King's Norton, with excellent flowers of Rosy Morn, Mrs. Elliott Douglas, Jean Douglas (Premier), Bookham White, Furthest North, John Knox, Ann Hathaway, Irma, Fujiyama, Mrs. Arthur Trow, W. H. Parson and Bob Acres. 2nd, Mr. C. H. HERBERT, Acocks Green, whose best flowers were Mrs. G. Marshall, Fujiyama, Bookham White, Brigadier and Basuto. 3rd, Mr. R. BRUCE WAITE, Harborne.

Twelve Fancy Carnations.—1st, Messrs. A. R. BROWN, LTD., with nice, clean flowers of Becky Sharp, Hercules, Liberte, Rhea, Mandarin, Sir Olaf, E. V. Lucas, Bombardier, Skirmisher, Butterfly (extra good), Charles Chappell and Linkman. 2nd, Mr. C. H. HERBERT.

Twelve Yellow-Ground Picotees.—Here again Messrs. A. R. BROWN, LTD., secured the first prize with grand flowers of Margaret Lennox, John Ruskin, Santa Claus, Exquisite, Onward, Togo (Premier), Mrs. C. F. Budenberg, Pure Gem, Corona, Queenie, Professor Bursall and Miss Winifred. 2nd, Mr. C. H. HERBERT, who had excellent specimens of Eclipse (Premier), John Ruskin and Santa Claus. 3rd, Mr. R. BRUCE WAITE.

Twelve White-Ground Picotees.—1st, Mr. C. H. HERBERT, with choice flowers of Mrs. Twist, Fortrose, Ganymede, Mrs. Gorton, Lavinia, Clementina, Favourite, Kathleen, Radiant, Fair Maiden (Premier), John Smith and Edmund Shorthouse. 2nd, Mr. R. BRUCE WAITE, whose flowers of Mrs. Hammond, Edmund Shorthouse (Premier) and W. E. Dickson were meritorious. 3rd, Messrs. A. R. BROWN, LTD.

Twelve Flake or Bizarre Carnations.—Mr. C. H. HERBERT was again placed first with medium-sized, well-finished flowers of Master Fred (Premier), George Melville, J. S. Hedderley, Sarah Payne, J. J. Keen, Admiral Curzon, Gordon Lewis, Robert Houlgrave, Teddy,

Harold, Ophelia and Wm. Skirving. 2nd, Mr. R. BRUCE WAITE. 3rd, Messrs. A. R. BROWN, LTD.

FLOWERS SHOWN IN VASES.

BLOOMS STAGED IN THREES.

Six Varieties of Self Carnations.—1st, Messrs. A. R. BROWN, LTD., with large, beautifully set-up flowers of Mrs. Elliott Douglas, Rosy Morn, Mrs. G. Marshall, Titan, Britannia and Cardinal. 2nd, Mr. R. G. RUDD, King's Heath. John Knox, Mrs. Robert Gordon and Furthest North were the best in this stand. 3rd, Mr. F. BAYLISS, Walsall.

Six Varieties of Fancy Carnations.—Messrs. A. R. BROWN, LTD., won the 1st prize with unusually large flowers of Becky Sharp (Premier), Lord Steyne, Mandarin, Alice Byron Stewart, Queen Eleanor and Linkham. 2nd, Mr. R. BRUCE WAITE.

Six Varieties of Yellow-Ground Picotees.—1st, Mr. R. BRUCE WAITE. The varieties exhibited were Eclipse (Premier), Neil Kenyon, Corona, F. W. Goodfellow, Mrs. J. J. Keen and Santa Claus. 2nd, Messrs. A. R. BROWN, LTD.

Six Varieties of White-Ground Picotees.—Here again Mr. R. BRUCE WAITE excelled with dainty flowers of Mrs. Hammond, Ganymede, Lady Sybil, Mrs. Openshaw, Thos. William and Maud Brown. 2nd, Mr. C. H. HERBERT.

SECOND DIVISION (AMATEURS).

FLOWERS SHOWN ON STANDS.

Six Self Carnations.—1st, Rev. C. A. GOTTWALTZ, with large flowers of John Knox, Hadzor, Wyatt, Solfatera, Albion and John Pope.

Six Fancy Carnations.—The last-named exhibitor won first prize with first-rate flowers, Mrs. Leo Hunter, Robert Morton, Linkman, Bombardier, Skirmisher and Mona.

Six Yellow-Ground Picotees.—1st, Mr. T. M. TRANTER, whose specimens of Mark Twain and John Ruskin were noteworthy.

Six White-Ground Picotees.—Rev. C. A. GOTTWALTZ was the only exhibitor in this class. He showed beautifully clean flowers of Gertie, Lucy, Agnes Helen, Georgina, Mrs. George Chaundy and Pride of Leyton. Mr. T. M. TRANTER had a walk-over in the class for six Flake or Bizarre Carnations. He had Master Fred and J. S. Hedderley in good condition.

FLOWERS STAGED IN THREES (AMATEURS).

Three Varieties of Self Carnations.—1st, Mr. A. H. BIRCHLEY, Selly Oak, with very large flowers of Gordon Douglas (Premier), Daffodil and Bob Acres. 2nd, Mr. T. M. TRANTER.

Three Varieties of Fancy Carnations.—Mr. A. H. BIRCHLEY again excelled with heavy flowers of Hercules, Linkman and John Ridd. 2nd, Mr. T. M. TRANTER.

Three Varieties of Yellow-Ground Picotees.—Mr. A. H. BIRCHLEY led with Margaret Lennox, Neil Kenyon and Togo. 2nd, Rev. C. A. GOTTWALTZ.

Three Varieties of White-Ground Picotees.—The 1st prize in this class was also won by Mr. A. H. BIRCHLEY, whose flowers of Lavinia, Fair Maiden (Premier) and Mrs. Gorton were very beautiful. 2nd, Rev. C. A. GOTTWALTZ.

THIRD DIVISION.

Competition in this section was more spirited than in the previous ones, and some very good flowers were displayed. Only exhibitors whose collections of Carnations did not exceed 300 plants were eligible to compete. The most successful exhibitors were Mr. E. KENWRIGHT, Smethwick; Mr. F. WOODWARD, Bournville; Mr. P. J. BROOKES, Bearwood; Mr. A. HALL, Harborne; and Mr. J. T. SMISTER, Rochester.

Premier Flowers (Dressed Bizarre).—Master Fred, shown by Mr. C. H. HERBERT.

Flake.—J. J. Keen, shown by Mr. C. H. HERBERT.

Heavy-Edged White-Ground Picotee.—Edmund Shorthouse, shown by Mr. R. BRUCE WAITE.

Light or Wire-Edged White-Ground Picotee.—Fair Maiden, shown by Mr. C. H. HERBERT.

Heavy-Edged Yellow-Ground Picotee.—Togo, shown by Messrs. A. R. BROWN, LTD.

Light-Edged Yellow-Ground Picotee.—Eclipse, shown by Mr. C. H. HERBERT.

Yellow-Ground Fancy.—Edenside, shown by Mr. R. BRUCE WAITE.

Self.—Jean Douglas, shown by Messrs. A. R. BROWN, LTD.

Premier Flowers Shown in Vases, Self.—Gordon Douglas, shown by Mr. A. H. BIRCHLEY.

Fancy.—Becky Sharp, shown by Messrs. A. R. BROWN, LTD.

Yellow-Ground Picotee.—Eclipse, shown by Mr. R. BRUCE WAITE.

White-Ground Picotee.—Fair Maiden, shown by Mr. A. H. BIRCHLEY.

WINNERS OF MEDALS.

The Silver Medal offered to the most successful exhibitor in the First Division was won by Messrs. A. R. BROWN, LTD., with 177 points. Mr. R. BRUCE WAITE was awarded the Bronze Medal with 159 points. The Rev. C. A. GOTTWALTZ won the Silver Medal offered in the Second Division with 96 points. Mr. T. M. TRANTER gained the Bronze Medal with 92 points.

The W. Waters Butler Silver Medal offered to the most successful exhibitor in the Third Division was won by Mr. F. WOODWARD with 76 points.

The Bronze Medal offered by the Midland Carnation and Picotee Society was won by Mr. E. KENWRIGHT, with 66 points.

The "Carnation Brown" Silver Medal offered to the most successful exhibitor in the Novice Classes was awarded to Mr. A. J. HILL.

SOUTHAMPTON ROYAL HORTICULTURAL.

JULY 13, 14.—The annual Carnation and Sweet Pea Show was held on the Royal Pier on the above dates. In the Carnation section the competition was not great, but the quality of the exhibits was good. Sweet Peas were extra fine. Fruit, and especially vegetables, were a great attraction, and the trade exhibits were very helpful to the general effect. Mr. C. S. FUDGE, as usual, discharged the secretarial duties with pleasure to everybody.

Picotees.—Border varieties in vases. For twelve selfs, fancies and yellow ground flowers, three blooms of each. Mr. J. DOUGLAS, Edenside, Great Bookham, won the 1st prize from two other competitors. The varieties Queen Eleanor, Elizabeth Shifner, The King and Daffodil were specially noteworthy. Messrs. A. R. BROWN, LTD., Wyckall Nurseries, King's Norton, Birmingham, were 2nd.

Mr. DOUGLAS also won the premier honour for Carnation Selfs in four varieties with Pink Clove, The King, Bookham Scarlet and another. Mr. R. MORTON, Grange Dene, Woodside Park, London, N., was 2nd. Mr. DOUGLAS was 1st also for four vases of fancy Carnations other than white-ground flowers, and for white-ground fancy Carnations in four varieties, showing in this latter class the varieties Mrs. T. W. Ewen, Daisy Walker and Lord Kitchener.

Mr. MORTON had the best of three exhibits in the class for four vases of yellow-ground Picotees, distinct, his best flowers being of the varieties Eclipse and John Ruskin. Mr. J. DOUGLAS won the 2nd prize.

Dressed Carnation blooms shown on cards were only poorly represented. Messrs. A. R. BROWN, LTD., were the only exhibitors. Messrs. BROWN, too, were the only exhibitors for twelve fancies, twelve selfs, and the same number of yellow and white-ground Picotees.

In the amateur classes for border varieties Mr. H. W. FROSTICK, Thornton Heath, won the 1st prize for six vases of selfs, fancies and yellow-ground Picotees. This exhibitor also won prizes for four selfs distinct and for a similar number of fancy Carnations.

Mr. J. A. FORT, The College, Winchester, had the best vase of any white Carnation, staging Bookham White, and Rosy Morn secured for the same exhibitor the 1st prize for any blush or pink Carnation. Mr. FORT staged the variety Mrs. Griffith Jones in the class for any buff or terra-cotta self, Duke of Wellington in the class for any self not previously named, and Eclipse for the best yellow-ground Picotee, winning premier honours. Mr. FROSTICK won

in the class for a vase of any white-ground variety.

The premier Carnation blooms were Robert Houlgrave and Gordon Lewis, a like honour falling to Professor Burstall and Queenie in the Picotee section, all belonging to Messrs. A. R. BROWN, LTD.

Tree or American Carnations were shown by four exhibitors. Sir RANDOLF BAKER, Ranston, Blandford (gr. Mr. Usher), was 1st with a good set.

Sweet Peas were well represented in the various classes provided by Messrs. Toogood and Sons for nine bunches, Messrs. Sutton and Sons for six, and Messrs. E. Webb and Sons for eight bunches. In all these classes Sir RANDOLF BAKER secured the premier awards with grand blooms.

Fruit was better in quality than in quantity. For a collection of four varieties—Pines excluded—three entered, the best coming from W. H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood), who had good Black Hamburgh Grapes, brown Turkey Figs, Peaches and a Melon. ELLEN LADY SWAYTHLING, South Stoneham House, Southampton (gr. Mr. T. Hall) was 2nd, and showed superior Grapes—Madresfield Court—but poor Peaches and a moderate Melon. Mr. MYERS had the best two bunches of Black Grapes; LADY SWAYTHLING the best White in Muscat of Alexandria. Mr. MYERS was 1st with one Melon.

Vegetables were one of the finest features of the show. Prizes in four classes for six dishes each were provided by Messrs. Sutton and Sons, James Carter and Co., E. Webb and Sons, and Toogood and Sons. Mr. MYERS was invincible in all the classes.

ISLE OF WIGHT CARNATION AND SWEET PEA.

JULY 15.—The annual exhibition of the Isle of Wight Carnation and Sweet Pea Society took place on this date at Newport, the opening ceremony being performed by H.R.H. Princess Henry of Battenberg, who was accompanied by Prince and Princess Louis of Battenberg. Most of the exhibits, which reached a higher level than has been the case previously at these shows, were afterwards sold on behalf of the Red Cross Funds. In the Sweet Pea classes, the premier honours were carried off by the County Asylum (gr. Mr. H. C. Cross), to whom six 1st prizes and one 2nd were awarded, in addition to the President's Silver Cup for twelve vases of Sweet Peas.

ROYAL SCOTTISH ARBORICULTURAL AFFORESTATION AFTER THE WAR.

JULY 14.—The summer general meeting of this society was held at 5, St. Andrew Square, Edinburgh, on the 14th inst. The president, Colonel Stirling, of Keir, being on active service, the chair was occupied by Sir Andrew Agnew, the senior vice-president. There was a small attendance of members.

The principal business was the passing of the following resolution, which was moved by Mr. S. Gammell, of Drumtochty:—"The Royal Scottish Arboricultural Society, in general meeting assembled, while recognising that the first duty of the nation at this time is to do everything in its power to bring the war to a speedy and successful termination, respectfully points out that at the end of the war a large number of soldiers and sailors who return may not be able to resume their former occupations, and may desire to find outdoor employment and a comfortable home in the country, which, under present circumstances, they would not be able to do, and that afforestation—with which might be advantageously combined small holdings and other rural industries—if carried out on a considerable scale in various centres, would afford suitable employment, under healthy conditions, for a large and ever-increasing population. The society, therefore, without repeating the now familiar arguments in favour of afforestation, all of which have been greatly strengthened by

events since the war began, respectfully draws the attention of the Government to the urgent need of immediate preparation for the emergency referred to, and suggests that the Board of Agriculture for Scotland, as the body charged with the care of forestry in this country, should be authorised to prepare schemes of afforestation on the lines indicated, and should be assured that adequate funds will be provided to put those schemes into operation whenever the war is over, so as to meet the needs of returning soldiers and sailors and others who desire to settle upon the land."

YORK FLORISTS'.

JULY 7.—The Yorkshire Gala having been abandoned, many of the competitors sent their exhibits to the show of the Ancient Society of Florists, which was held in the Guildhall, York, on the 7th inst. There were several very fine groups of plants, Mr. S. PICKERING showing the group he had prepared for the Yorkshire Gala, for which a Gold Medal was awarded. In the same class Silver Medals were awarded to Mr. W. WATSON, the Museum, for a group in which were staged Calceolarias and Ferns, and Mr. SCOTT WATSON for a group of Begonias, Ferns and Palms. Mr. SCOTT WATSON was also placed 1st in four classes for Begonias. Councillor ALLEN was successful in five classes for Carnations, and Mr. H. E. JOHNSON was the most successful exhibitor in the classes for annuals.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JULY 12.—The monthly meeting of this Society was held at the R.H.S. Hall on Monday, the 12th inst., Mr. Chas. H. Curtis in the chair. Two members were nominated for election. Four members were allowed to withdraw double the amount of interest, amounting to £24 6s. 6d.; and two were allowed to withdraw from their deposit account the sums of £3 10s. and £2 10s. respectively; one member was assisted from the Convalescent Fund. The sick pay for the month on the ordinary side amounted to £39 9s. 6d., on the State section £21 11s. 8d., and maternity benefits to £6; whilst the quarterly payments to the chronic sick amounted to £13 13s. The treasurer stated that the trustees had purchased £1,000 of War Loan on behalf of the Society.

GENERAL BULB-GROWERS' OF HAARLEM.

The Floral Committee of the General Bulb-growers' Society of Haarlem made the following Awards at the meetings in May and June:—

FIRST-CLASS CERTIFICATES.

Tulipa Greigii princeps (scarlet), *Iris Regelio-cyclus Isolde* (standards brown, falls dark brown), *I. R.-c. Polyhymnia* (standards greyish silver, falls purple).

AWARDS OF MERIT.

Tulipa Greigii Primrose (clear yellow and red), *Tulips Eleonora Parrot* (wine-red, shaded violet), *James Watt Breeder* (dark violet and brown), *Prince of Wales Darwin* (rosy-red and white), *Cherbourg* (yellow and bronze), *Laura Darwin* (violet and white), *Rosabella* (rose and creamy yellow). The following varieties of *Iris Regelio-cyclus*: *Hera* (standards purple, falls brownish yellow), *Honorio* (standards purple, fall yellow), *Thunelda* (standards brownish lilac, fall sulphur yellow); *Apollo* (standards lilac, falls yellow and brown), and *Cloth* (standards dark violet, falls dark brown); *Iris Zwanzburg* (*I. lutescens aurea* × *T. Suziana*) (standards white, shaded grey; falls yellow, shaded violet); *Irises Seghers* (standards lilac, falls yellow), *van Beyeren* (standards blue, falls yellow), *Gorett Flinck* (standards creamy yellow, falls dark yellow), *Palamedes* (standards creamy-white), falls canary yellow), *Pieneman* (standards blue, falls spotted yellow); *Freesia Tubergenii La Charmante* (apricot-yellow and rose colour),

Iris filifolia Lord Derby (lilac blue, striped yellow), *I. j. Tollens* (dark mauve, with yellow spots), *Trollius Etna* (orange), *T. Goldquelle* (yellow), *Pyrethrum hybridum Rose tenare* (rose), *Astilbe Arendsii Gloria* (dark rose), *Iris hispanica Brahms* (standards clear blue, falls creamy), *I. h. Enchantress* (standards lilac blue, falls clear blue), *I. h. Hollandia* (standards blue indigo, falls blue), *I. Albert Neuhijs* (sulphur-yellow), *I. Gatesii*, *I. variegata La Neige* (white), *Papaver orientale Perry's White*, *P. o. hybridum Heenkii* (soft rose), *P. o. nanum Red Cap* (orange-scarlet), *Paeonia chinensis La France* (Lemoine) (rose), and *P. Pierre Duchatre* (Crousse) (rose, bordered with silvery-white).

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 8.—Committee present: Rev. J. Crombleholme (in the chair), Dr. Hartley, Messrs. R. Ashworth, J. Cypher, P. Foster, A. Hammer, J. Lupton, D. McLeod, W. Shakleton, S. Swift, H. Thorp, Z. A. Ward, and H. Arthur (secretary).

AWARDS.

AWARDS OF MERIT.

Oncidium crispum Heathfield var., from J. J. BOLTON, Esq.

Odontoglossum × *Duchess of Teck*, from A. J. OAKSHOTT, Esq.

CULTURAL CERTIFICATE.

To J. J. BOLTON, Esq. (gr. Mr. Jas. Law), for a fine specimen of *Oncidium crispum*. (A Bronze Medal was also awarded.)

GROUPS.

Large Silver Medals were awarded to R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden), for a group in which were staged *Odontoglossum crispum* var. *George* × *Bronze Dragon*, *O. Victor Hye de Crom*, *Miltonia Queen Alexandra*, and *Cypripedium gigas Cordean Hall*; also to Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton), for a group composed of *Cattleyas* and *Miltonias*.

A Silver Medal was awarded to Messrs. CYPHER AND SONS, Cheltenham, for a group.

Obituary.

M. JULES RUDOLPH.—Among the losses to French horticulture by the war we regret to have to add the name of this well-known author and journalist, who recently succumbed to an attack of congestion of the lungs at his dépôt. He was on the editorial staff of *La Revue Horticole*. In addition to his work as a contributor to the French horticultural Press, he was the author of *Les plantes vivaces de pleine terre*; *Un jardin de plantes officinales*; *Les crotons et leur culture*; *Monographie botanico-horticole du genre Ganania*. Among his works that received the honour of being *couronnés* by the National Horticultural Society of France we may mention *Caladium*, *Anthurium*, *Alocasia*, et autres Aroïdées de serres; *Calceolaires*, *Cinéraires*, *Coltus*, *Héliotropes*, *Primévères de Chine*, etc.; *Culture forcée des Oignons à fleurs*; *Manuel du Jardinier*; *Les Nepenthes et leur culture*; and *L'Ocillet à la grande fleur*. He was a chevalier of the Mérite Agricole and an Officier d'Académie.

ANDREW IRVINE.—We regret to record the death, in his eighty-seventh year, of Mr. A. Irvine, which took place at his residence, Ardross, Tighnabruich, on the 17th inst. Mr. Irvine was in business as a general merchant, being head of the firm of Irvine and Son. At one time he had a nursery, and specialised in Pansy culture, exhibiting successfully for some years at the leading shows in Scotland. Also on one occasion, at the Crystal Palace, he gained five 1st, two 2nd, and one 3rd prizes. He was interested in church and public work, and was highly esteemed in the Kyles district of Argyshire.

MARKETS.

COVENT GARDEN, July 23.

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 average for the week preceding the date of our report. The prices depend upon the quality of the sample, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Achillea, per doz. bunches ..	3	0	4	Lily-of-the-Valley, per dozen bunches:	
Alstroemeria, per doz. bunches ..	3	0	4	— extra special ..	21 0-24 0
Asters, white, per doz. bun. ..	5	0	6	— special ..	15 0-18 0
— pink, per doz. bun. ..	4	0	5	— ordinary ..	10 0-12 0
Carnations, per dozen blooms, best American varieties ..	0	9	1	Marguerites, yellow, per doz. bun.:	1 6-2 0
— smaller, per doz. bunches ..	4	0	6	Orchids, per doz.:	
— Carola (crimson), extra large ..	1	6	2	— Catleyae ..	8 0-10 0
— Malmesbury, per doz. blooms ..	3	0	4	— Harrisoniae ..	4 0-5 0
— pink ..	3	0	4	— Odontoglossum crispum ..	1 6-2 0
Coreopsis, per doz. bunches ..	0	9	1	Pelargonium, per doz. bunches, double scarlet ..	4 0-6 0
Cornflower, per doz. bun., blue ..	1	0	1	— white, per doz. bunches ..	4 0-5 0
— white ..	1	0	1	Roses: per dozen blooms, Bride ..	1 0-1 6
— pink ..	1	0	1	— Duchess of Wellington ..	— —
Delphinium, per doz. bunches ..	3	0	6	— Frau Karl ..	— —
Eucharis, per doz. bunches ..	1	0	1	— Druschki ..	0 9-1 0
Gaillardia, per doz. bunches ..	1	0	1	— Général Jacqueminot ..	0 4-0 6
Gardenias, per box of 15 and 18 blooms ..	2	6	3	— Joseph Lowe ..	0 9-1 0
Gladioli:				— Lady Hillingdon ..	0 9-1 0
— Brecheleyensis, per doz. spikes ..	1	6	2	— Liberty ..	1 0-1 6
— The Bride (white) ..	4	0	6	— Madams A. Chateau ..	0 9-1 0
— America, per doz. spikes ..	1	0	1	— Melody ..	0 9-1 0
— Halley (salmon), per doz. spikes ..	1	0	1	— My Maryland ..	0 9-1 0
— Pink Beauty ..	0	9	1	— Niphotos ..	0 9-1 0
Gypsophila, paniculata, per doz. bunches ..	4	0	6	— Prince de Bulgarie ..	— —
— double, per doz. bun. ..	6	0	8	— Richmond ..	0 9-1 6
Lapageria, per doz. blooms ..	1	6	2	— Sunburst ..	1 0-1 6
Lilium longiflorum, per doz. long ..	3	6	4	— White Crawford ..	1 0-2 0
— short ..	3	6	4	Scabiosa caucasica (mauve), per doz. bun.:	2 6-3 0
— lancifolium album, long ..	2	6	2	Spiraea, white, per doz. bunches ..	— —
— short ..	1	9	2	— Statice, mauve, per doz. bun. ..	4 0-6 0
Lilium lancifolium rubrum, per doz. long ..	1	6	1	Stephanotis, per 72 pins ..	1 0 —
— short ..	0	9	1	Stock, double white, per doz. bun.:	5 0-8 0
				— mauve, per doz. bunches ..	6 0-8 0
				Sultan, white, mauve, yellow, per doz. bun.:	2 0-3 0
				Sweet Peas, per doz. bunches, special ..	4 0-5 0
				— ordinary ..	2 6-3 0
				Tuberose, per packet, 24 blooms ..	0 4-0 6
				White Heather, per doz. bunches ..	6 0-9 0

Cut Foliage, &c.: Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.		
Adiantum Fern (Maidenhair) best, per doz. bunches ..	3	0	4	Fern, French, per doz. bunches ..	0	6	8
Agrostis (Fairy Grass), per doz. bunches ..	2	0	4	— common ..	3	0	4
Asparagus plumosus, long trails, per half-dozen	1	6	2	Galax leaves, green, per doz. bun.	2	0	—
— medium, doz. bunches ..	12	0	18	Grasses, various, per doz. bun.	1	6	2
— Sprengeri ..	6	0	12	Hardy foliage, various, per doz. bun.	2	6	4
Carnation foliage, doz. bunches ..	3	0	5	Lichen Moss, per doz. boxes ..	10	0	12
Croton foliage, doz. bunches ..	12	0	15	Moss, gross bunches ..	8	0	—
Cycas leaves, per doz. —	—	—	—	Myrtle, doz. bunches English, small-leaved	6	0	—
Eulalia japonica, per bunch ..	1	0	1	— French, per doz. bunches	1	0	1
				Smilax, per bunch of 6 trails	1	0	1

REMARKS.—Cut flowers, with the exception of Carnations and Roses, have not been very plentiful during the past week, and consequently there has been a further rise in the prices. The most popular flowers amongst the buyers are white Stocks and white Asters, as there are no other flowers so suitable as these for floral designs at the present time. Lilium longiflorum are more expensive than is usually the case at this time of the year. White Gladioli, of the variety The Bride, is arriving from Holland in excellent condition. Other Gladioli available are G. Brecheleyensis and the varieties Pink Beauty, America, and Halley; the latter is a very good variety for market purposes, of salmon colour. Sweet Peas are nearly over. Large Catleyas are more plentiful, and there are also a few specimens

of Catleya Harrisoniae. Odontoglossums are scarce. The first Chrysanthemums are now available, a few good specimens of Early White being seen in the market on Wednesday last.

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

	s.d.	s.d.		s.d.	s.d.		
Aralia Sieboldii, dozen	4	0	6	Fuchsias, 48's, per dozen	6	0	8
Araucaria excelsa, per dozen	18	0	21	Geonoma gracilis, 60's, per dozen	6	0	8
Asparagus plumosus nanus, per dozen	10	0	12	— larger, each doz.	2	6	7
— Sprengeri	6	0	8	Grevilleas, 48's, per doz.	5	0	6
Aspidistra, per doz. green	13	0	30	Heliotropes, 48's, per doz.	5	0	6
— variegated	30	0	60	Hydrangeas, pink, per doz.	6	0	9
Cacti, various, per tray of 15 s	4	0	—	— blue, each	1	0	2
— tray of 12's	6	0	—	Kentia Belmoreana, per dozen	6	0	8
Campanula isophylla, 48's, per dozen	8	0	9	— Forsteriana, 60's, per dozen	4	0	8
— alba	9	0	10	— larger, per doz.	18	0	36
Cocos Weddelliana, 48's, per doz.	18	0	30	Latania borbonica, per dozen	12	0	30
— 60's, per doz.	8	0	12	Lilium longiflorum, per dozen	15	0	18
Croton, per dozen	18	0	30	Marguerites, in 48's, per doz., white	6	0	8
Dracaena, green, per dozen	10	0	12	Pandanus Veitchii, per dozen	36	0	48
Ferns, in thumbs, per 100	8	0	12	Pelargoniums, zonal, 48's, per doz.	4	0	5
— in small and large 60's	12	0	20	Phoenix rupicola, each	2	6	21
— in 48's, per dozen	5	0	6	Spiraea, white, per dozen	—	—	—
— choicer sorts, per dozen	8	0	12	— pink, per doz.	—	—	—
— in 32's, per doz.	10	0	18	Verliehen, Miss Willmott, 48's, per doz.	6	0	8
Ficus repens, 48's, per doz.	4	6	5	— scarlet	8	0	9
— 60's, per doz.	3	0	6	Viscaria, 48's, per dozen	8	0	9

REMARKS.—Campanula isophylla and C. l. alba are arriving in very good condition. These and white Marguerites are the plants which are receiving the most attention. A few Lilium longiflorum in forty-eight pots are obtainable. Hydrangeas are nearly over. The sale for Ferns is fairly good, and there is little demand for Palms.

Fruit: Average Wholesale Prices.

Apples—	s.d.	s.d.		s.d.	s.d.
— Australasian, per box	15	0	17	0	—
— English cooking, per ½ bus.	1	9	2	0	—
Bananas, bunch:					
— Medium	7	6	—	—	—
— X-medium	8	6	—	—	—
— Extra	9	6	—	—	—
— Double X	10	6	—	—	—
— Giant	11	0	14	0	—
— Red, per ton	£20	—	—	—	—
— Jamaica, p. ton	£13	—	£14	—	—
Cherries, English, per ½ bus.	6	0	13	0	—
— Morello, per ½ sieve	7	0	8	0	—
Currants, Black, per ½ bus.	8	0	10	0	—
— Red, per ½ bus.	5	0	6	0	—
Figs, per doz.	1	0	3	0	—
Gooseberries, dessert, per lb.	0	6	7	—	—
Grape Fruit, per doz.	25	0	30	0	—
Grapes: English, Black, per lb.	0	9	2	0	—
— Canon Hall, per lb.	2	0	4	0	—
— Muscat, per lb.	0	9	2	0	—
Greengages, Continental, p. ½ bus.	4	6	14	—	—
Loganberries, skip	1	0	—	—	—
Lycches, per doz. lbs.	17	0	18	—	—
Melons, each	1	6	2	—	—
— French Cantaloupe, each	3	0	5	—	—
— Valencia, per case	13	0	—	—	—
Nectarines, per doz.	1	0	10	0	—
Nuts, Almonds, per bag	7	0	—	—	—
— green, per lb.	0	9	1	—	—
— Brazil, new, per cwt.	52	0	60	0	—
— Coconuts, per 100	—	—	—	—	—
— Walnuts, dried, per cwt.	72	0	—	—	—
Oranges, per case	10	0	16	—	—
Peaches, English, per doz.	1	0	10	0	—
Pears, Williams (48) per box	6	0	—	—	—
Plums, per ½ bus.	4	6	6	—	—
Raspberries, skips	10	0	1	—	—
— per doz. punnets	3	0	5	—	—

REMARKS.—The following varieties of English Apples are now available: Julien, Keswick Codlin and Lord Suffield. Shipments of the dessert variety Sturmer Pippin are arriving from Tasmania. Strawberries, packed in punnet baskets, are still obtainable. Of Raspberries, Loganberries, and Black and Red Currants there are plentiful supplies. Dessert Gooseberries are sufficient for the demand. The following varieties of Cherries are now available: Black Eagle, Flemish Red, Napoleon Bigarreau, and Turkey Heart. Large quantities of Plums and Greengages are arriving from the Continent daily. Black Grapes and the Muscat varieties are now very plentiful, with the exception of the variety Canon Hall Muscat. The market is still well supplied with Peaches and Nectarines, and Melons and Figs are more plentiful than they have been. E. H. R., Covent Garden, July 23.

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.		
Artichokes, Globe, per doz.	2	0	2	Leeks, per dozen ..	1	6	2
Aubergines, per doz.	3	0	3	Lettuce, Cabbage and Cns. per doz.	0	9	2
Beans, Broad, per bus.	2	6	3	Mushrooms, cultivated, per lb.	0	8	10
— French, per lb.	0	2	0	— Buttons	0	8	10
Beetroot, per doz. bunches ..	2	0	—	— Outdoor, per ½ bus.	3	0	4
Cabbage, per doz.	0	9	1	Mustard and Cress, per dozen punnets ..	0	10	1
Carrots, bunches ..	2	6	4	Onions, per cwt., Foreign ..	3	6	5
Cauliflowers, per doz.	2	6	3	— green, per doz. bunches ..	3	0	—
Cucumbers, per doz.	3	0	4	— Valencia, per case	6	6	7
Garlic, per lb.	1	0	1				
Herbs, per doz. bunches ..	2	0	8				

Vegetables: Average Wholesale Prices—Continued.

	s.d.	s.d.		s.d.	s.d.				
Peas, per bus.	4	0	5	Tomatoes, English, per doz.	2	0	4	3	
Radishes, per doz. bunches	1	0	1	3	Turnips, new, per doz. bun.	2	0	2	6
Scarlet Runners, per bushel	6	0	—	—	Vegetable Marrows, per tally	5	0	—	0
Spinach, per bus.	4	0	—	—	Watercress, p. doz.	0	4	—	0

REMARKS.—Tomatoes have been less plentiful during the week. Peas are scarce, but of Runner and French Beans there are moderate quantities available. Cabbage and Vegetable Marrows are sufficient to satisfy the demand. There have been fewer Cucumbers available this week. Field Mushrooms are very plentiful. Business has been moderately brisk during the week. E. H. R., Covent Garden, July 23.

New Potatoes.

			s.d.	s.d.				s.d.	s.d.				
Bedford	..	..	4	3	5	3	Kent..	..	..	5	0	5	6
Blackland	..	..	4	3	4	6	Lincoln	..	..	4	6	5	6

Old Potatoes.

3s. 6d. to 4s. 6d. per bag.

REMARKS.—Trade, both in old and new tubers, is very slow this week, and prices are decreasing. The supply is quite equal to the demand. E. J. Newborn, Covent Garden and St. Pancras, July 23.

THE WEATHER.

THE WEATHER IN WEST HERTS. Week ending July 23.

Another Cold and Wet Week.—All the days of the past week have been below the average in the temperature for the time of year. In fact, there has not been a single unseasonably warm day since the 7th inst., or for three weeks. The first two nights were rather warm, but since then they have been below the average in temperature. The ground is at the present time 4° colder at 1 foot deep and 2° colder at 2 feet deep than is seasonable. Some rain fell on each day, and to the total depth of an inch. During the last fortnight there have been only three days without rain—the total fall for that period being nearly 3 inches—or more than the average rainfall for the whole month. During the week 2 gallons of rainwater have come through the bare soil percolation gauge; but none at all for nine weeks through that on which short grass is growing. Both these percolation gauges are a yard square, and 2½ feet deep. The sun shone on an average for 6½ hours a day, which is the mean daily duration for the month. Light winds and calms alone prevailed during the week. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 13 per cent. E. M.

CATALOGUES RECEIVED.

STUART LOW & Co., Bush Hill Park, Middlesex.—Rare Greenhouse Plants, Trees and Shrubs.
CONYERS, B. FLETCHER, Jr., Germantown, Philadelphia.—Tree, Shrub, and Fruit Seeds.
LITTLE AND BALLANTYNE, Carlisle.—Bulbs, Roses, and Fruit Trees.

DEBATING SOCIETIES.

BATH GARDENERS.—The meeting held on the 12th inst. was well attended. The Chairman, Mr. T. Parrott, presided. The special feature of the meeting was an exhibition of Sweet Peas, and the Chairman congratulated the members on the fine display. In place of the customary paper there was a discussion on the merits of the various exhibits at the meeting.

WATFORD HORTICULTURAL.—At the monthly meeting, held on the 13th inst., papers were read on "Bottling Vegetables," by Mr. F. J. McLees, and "Roses," by Mr. W. B. Kettle. An honorary exhibit of Sweet Peas, twelve varieties, was staged by Mr. W. E. Catesby, J.P. (gr. Mr. W. Webb).

WARE GARDENERS.—A meeting of this Society was held on the 20th inst., Mr. T. Porter presiding. Mr. F. W. Miles delivered a lecture on "Conservatory Decoration," which was followed by a discussion. Strawberries were shown by Mr. C. Andrews and a group of Campanula pyramidalis exhibited by the lecturer was awarded the Society's certificate of merit.

GARDENING APPOINTMENTS.

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

Mr. J. McTaggart, for the past two and a half years Gardener to H. M. BENTLEY, Esq., Milnhaugh, Blantyre, as Gardener to J. CURRIE, Esq., Upham House, Aldbourne, Wiltshire. [Thanks for ls. for R.G.O.F. Box.—Eds.]

SCHEDULES RECEIVED.

Special Exhibition of Chrysanthemums, arranged by the Burnley and District Horticultural Society Mutual Improvement Association, to be held at the Mechanics' Institute, November 13. Secretary, Mr. J. G. Elliott, 22, Hind Street, Queensgate, Burnley.

ENQUIRY.

HAVE the following plants ever borne fruits in English glasshouses? If so, where? *Bertholletia excelsa*, *Achras Sapota*, *Cinnamomum zeylanicum*, *Oreodoxa regia*, *Piper nigrum*, *Caryophyllus aromaticus*, *Myristica fragrans*, *Elaeis guineensis*. *M. Buysman, Lawang, East Java.*

ANSWERS TO CORRESPONDENTS.

"There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self."—*Gardeners' Chronicle, No. 1, Vol. I., January 2, 1841.*

BOXES FOR BAY TREES: *M. Davey.* We do not advise the use of oil for treating the wood-work as a preservative, as oil of any kind is harmful to plants. The best plan is to char the insides of the tubs by burning.

BUCIDA BUCERAS: *Anxious Enquirer.* The correct name of *Bucida Bucerus* is *Terminalia Bucas*. It is a member of the *Combretaceae*, a native of the West Indies, and was introduced to this country in 1793. The bark has been used freely by tanners, and possibly it is still used for tanning to some extent. The plant may have been used for the medicinal purpose you name, but of this we have no knowledge. If you cannot obtain the plant from the nurseries you might try the Botanic Gardens.

CARNATIONS UNHEALTHY: *S. W., Horsham.* See reply to *H. G. S.*

CUCUMBER AND TOMATO: *T. A. L.* The Cucumber does not appear to be affected with the fungus *Cercospora melonis*, but we suspect that the trouble has arisen from excessive applications of manures or from manures of an unsuitable nature. You might inquire into the circumstances and see whether the question of manuring has not been overdone. The Tomato is a very spindly specimen, and could never have produced a satisfactory crop. The leaves are ill-developed and drawn, whilst the general appearance of the plant would seem to show that you have the Tomatoes growing in a structure that is insufficiently ventilated. Indoor Tomatoes cannot be over-exposed to light, and in order to save the plants from attacks of fungous diseases it is necessary that a current of air should at all times be perceptible to anyone passing through the house. If the plants are growing in the bed of the house we advise you to look them over, taking out any that appear sickly and unpromising like the specimen sent us. Then see that watering is given the proper attention, so that the ground is never waterlogged, but that it is allowed to become fairly dry between the applications.

ECONOMISING FUEL: *E. T. P.* The practice of mixing chalk with fuel for greenhouse boilers is a very old one, but it is doubtful if any advantage is derived therefrom. An authority on engineering to whom we submitted your letter informed us that there was very little, if any, value in the chalk, but that you would be well advised to make the experiment, for, contrary to your fears, the chalk would not harm the boilers, and it might act as a good radiator. The following details on how to use chalk with fuel were given by a correspondent in the issue for January 1, 1876:—1. The chalk should always be beneath the coal, and the stratum of coal should be to the chalk in the proportion of at least one part to two parts. 2. The lumps of chalk should bear some proportion also to the size of the grate or furnace—never above 2 inches in diameter. In an ordinary grate they should be about the size of a hen's egg, and in an ordinary cottage grate not larger than a Walnut.

FRAME FOR VIOLETS: *Dublin.* Your want of success in previous seasons with frame Violets is probably due to the fact that you omitted to provide a hot-bed of any description, and merely relied upon protecting materials, such as garden mats or a hot-water apparatus, which is often, in the hands of amateurs, exceedingly injurious to such plants as the sweet Violet. You should take out the soil from the frame for at least 2½ feet in depth; then loosen the soil below so that the water will get away easily. Place on the loosened soil a bed of suitable litter and leaves, prepared in the usual way by turning it over occasionally for some time before use, in order to allow the volatile gases to escape from the litter. This bed should be made firm by treading, and after treading the depth of the bed should be about 1 foot. Then you will need a layer of soil about 6 inches in depth upon this bed of leaves and litter. To be of the best possible it should consist of pasture turf of a rich loam, rather than sandy, and if it has been stacked in a heap for twelve months so much the better. Some decayed cow manure should be mixed with it, or, failing this, some decomposed manure from a spent hot-bed, taking care to avoid fresh horse manure. If the soil is of a heavier nature than is desirable mix some good leaf-mould with it—leaf-mould that has been formed from decayed Oak leaves. If these directions cannot be complied with an amateur might make his compost with old potting soil, decayed vegetable refuse, and such materials, though partially decayed vegetables may possibly cause trouble. If the loam is of a very light nature, sandy or gravelly soil, it may be all the more important to add cow manure. When the plants have been put out in the frame the level of the bed should have been so arranged that the leaves of the plants will be not more than 3 inches from the roof glass, for they need full and immediate exposure to the light. The hot-bed, if properly prepared will supply as much warmth as is necessary, and save you from many of the failures that arise from a damp and cold frame, and from frames that are apt to be over-heated by the hot-water apparatus. Fuller particulars in regard to the cultivation of Violets in frames and in open borders can be obtained by reference to *Pansies, Iolias and Violets* in the Present-day Gardening Series, price 1s. 9d., post free, from our publishing department.

GRAPES DROPPING: *H. S.* Black rot (*Guignardia Bidwellii*) of Grapes is present. Remove and burn every leaf and every fruit that is diseased. Following the attack, spray the vines with half-strength Bordeaux mixture when the leaves are unfolding, and continue the operation at intervals.

IRON IN SOIL: *W. B.* We do not suspect that the iron in the soil is the cause of the failure of your summer flowering plants, especially seeing that spring flowers, including bulbs and late summer-flowering plants, do well. Send some of the diseased plants for examination.

NAMES OF PLANTS: *W. H.* (1) *Cassia fulvida*; (2) *Thunbergia natalensis*; (3) *Pentstemon* sp., possibly heterophyllus, but specimen insufficient to identify; (4) *Convolvulus althaeoides* "Borden."—*W. J. B.* *Scorzonera purpurea*.—*E. Stickland.* B1, *Holcus lanatus*; A2, *Agrostis vulgaris*; 3, 4, *Pheum pratense*; 5, *Dactylis glomerata*; 6, *Bromus sterilis*.—*G.* 1, *Pentstemon tubiflorus*; 2, *Gaura Lindheimeri*; 3, *Senecio macrophyllus*; 4, not recognised from specimens sent; 5, *Lactuca Plumieri*; 6, *Populus alba*; 8, *Acaena myriophylla*.—*L. T.* 1, *Fuchsia gracilis*; 2, *Fuchsia Riccartonii*.—*F. J., Gloucester.* 1, *Danaea Laurus* (Alexandrian Laurel); 2, *Liriodendron tulipifera* (Tulip tree).—*W. D.* and *S.* *Tilia vulgaris*.—*D. M.* 1, *Rhododendron ferrugineum*; 2, specimen insufficient, impossible to identify properly from a single leaf; 3, *Carpinus Betulus*.—*Mrs. Bruce.* 1, *Platanus occidentalis*; 2, *P. orientalis*.—*T. H. Smith.* *Cytisus nigricans* var. *Carlieri*.—*Constant Reader, Notts.* 1, *Centaurea montana* (white variety); 2, *Lysimachia vulgaris*; 3, *Thalictrum minus*; 4, *Tradescantia virginica*; 5,

Hemerocallis graminea (minor); 6, *Epilobium angustifolium*; 7, *Lastrea Filix Mas*; 8, *Spiraea ariaefolia*; 19, *Polystichum angulare*; *Conifers* next week.—*A. W. G.* 1, *Hieracium aurantiacum*; 2, *Zephyranthes candida*.—*A. E.* The specimen sent appears to be *Helxine Soleirolii*, a Corsican plant bearing inconspicuous flowers, and not *Nertera depressa*. Probably the light soil and excessive shade account for the production of abnormal flower-heads of *Lilium candidum* such as you send.

PEAS UNHEALTHY: *J. T. S.* There is no disease present. Watering late in the day often causes the appearance about which you complain.

PRUNING FRUIT TREES: *Cheshunt.* It is too late to prune either the Peach, Nectarine or Cherry trees. The shoots should have been cut back last winter or spring to the fourth or fifth basal bud, and as the work was not undertaken then it must be left until next March. In the case of the Plum tree, cut back all breastwood to about the fourth leaf. Allow the leaders to continue growing, and prune these early next winter. Tie, or nail in, all loose shoots that are retained.

ROSES: *H. C. B.* The three long shoots, which you say are now being produced from the head of the weeping Rose, should not be cut back but kept for flowering next year. They are likely to produce flower trusses from most of the leaf axils. The shorter growths, for the greater part, will need to be taken out at the time of pruning. Generally speaking, the stronger, longer growths should be retained and the weaker and ill-developed shoots cut out, but in doing this regard must be shown for the symmetry of the head, which should be preserved as far as possible.

ROSES DISEASED: *G. H. E.* The specimens are injured by green fly. Spray the trees with an insecticide early next season. The variety *J. B. Clark* shows a trace of Rose-leaf black blotch, which, beyond disfiguring the foliage, does not cause much harm to the plants. Spray with liver of sulphur.

ROSE MILDEW: *Cheshunt.* To check or destroy mildew on your Roses, spray or syringe the trees with a solution of 1 oz. soft soap, 1 oz. flowers of sulphur, and 1 gallon of soft water, choosing a still evening for the operation. The sulphur will damage any blooms, and should, therefore, be applied before the buds expand or after the flowering period. Useful books on Rose culture are *The Handy Book of Pruning*, by James Udale, price 1s. 9d., and *Roses*, by H. R. Darlington, price 2s. 10d., post free, from our publishing department.

TOMATO LEAF SPOTTED: *Polo.* Tomato leaf-rust, *Cladosporium fulvum*, is present. If the fruits have formed, spray with liver of sulphur, but if the plants are young, use Bordeaux Mixture at half the usual strength. Ventilate the house freely, and burn the diseased portions of the plants as soon as they are detected.

TOMATOES: *F. F. S. and Co.* There is no disease present. Nitrogenous dressing applied too freely has caused the fruit to crack round the stalk region and ultimately to rot.—*G. E. A.* The spotting of your Tomatoes is due to a lack of phosphates in the soil, which should have a top-dressing of superphosphate to counteract the deficiency.

VINES DISEASED: *G. H.* The fungus present is *Botrytis cinerea*. This is caused by an excess of moisture, and when once introduced is difficult to eradicate. Spray the plant every four days with liver of sulphur, 1 ounce in 6 gallons water, and ventilate the house early in the day. Collect the leaves and fruit attacked by the fungus and burn them to prevent as far as possible the disease spreading.

Communications Received.—*A. E. W.*—Gardener—Anxious—Col. R. C.—F. C. W.—H. S.—W. E.—W. H.—F. C. G.—H. E. J.—Pomologist—E. M.—R. B.—H. P.—Mrs. A. B.—Toronto—E. L. M.—G. H.—R. G. P.—J. M.—H. S. J. M. A.—A. J. B.—M. B.—R. T. G.—R. P. B.—F. C.—Regular Reader—Dr. H. E. D.—C. T. G.—E. H. H.—H. S. T.—W. J. B.—W. G. S.—G. H. H. W.—A. C.—C. H. H.—S. M.—Sir H. M.—A. T. G.—W. B. H.—W. K.—P. B.—W. F. R.—H. R. D.—W. R. D.

THE Gardeners' Chronicle

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SPECIES OF BEARDED IRIS.

(Concluded from page 60.)

OF all the bearded Irises, plicata is the most interesting, and presents many problems of its own. Its apparent connection with Red Pallida and sambucina may be only accidental, due merely to the fact that sambucina (probably a hybrid of unknown parentage) and the varieties of Red Pallida which I happened to use in my crosses have plicata in them as a recessive. The results, however, are interesting, and may help to throw some light on the problem. Plicata (Mme. Chereau) was crossed with examples of all the sections and reciprocally. I did not expect to get any plicatas in the F_1 generation, intending to self or cross again to obtain the results I looked for in F_2 , and, in fact, no plicatas appeared in F_1 from any crosses with varieties of any of the sections I used (about 160 seedlings from 12 distinct crosses), except from Red Pallida ♀ × plicata and plicata ♀ × Red Squalens. These two crosses, however, repeated in succeeding years, gave invariably about one half plicatas (11 out of 22 seedlings as yet flowered). Subsequently, and still more unexpectedly, evidence appeared of the connection of sambucina with plicata (and Red Pallida), a cross of sambucina × a Red Pallida seedling (that is, two red-flowered Irises) giving 5 plicatas to 3 "reds." Plicata, therefore, is evidently in the varieties of Red Pallida and Red Squalens which I used, and also in sambucina. I use this expression loosely to cover the alternative possibilities either of all the factors for the plicata type being present but recessive, or that plicata

is produced by the meeting of two separate factors, one only of which is in Red Pallida (and Red Squalens), and the other in sambucina. Which is the correct interpretation I cannot yet say, as my crosses were not planned to test that point. When all the seedlings of my second generation crosses (of varieties whose immediate parentage I know) have flowered it may be possible to say at least which is the most likely, but the results of those so far flowered are conflicting. If the plicata type (the flower) should prove to be due to the meeting of two factors it would suggest the very curious conclusion that each of these two factors by itself produces red colour in Irises. One of these later results must, however, be mentioned, as it shows that plicata can be in, and can be reproduced from, an Iris other than Red Pallida or Red Squalens. Plicata crossed by pallida dalmatica (Princess Beatrice) gives exclusively violet-blue pallidas (80 seedlings flowered). From a pod of seed of one of these, uncrossed (possibly fertilised by a plicata) I have flowered one plicata, and no doubt all these varieties will give plicatas. I think, however, this may be a special case, as it involves this particular variety of pallida dalmatica (Princess Beatrice), which appears to me to be a hybrid and not simply a variety of pallida. It has the characteristic of imparting a blue tone to the seedlings of almost every cross made with it, as if it contained a red-inhibiting factor.

There are two other points not yet referred to which must be taken into account in any investigation into the original parent species of these Irises. One is the dark coloured *tipping* of the hairs of the beards. In most Irises where it occurs the hairs are tipped brown, but in many plicatas, the hairs being white or porcelain, they are tipped violet or purple, and the tipping may be strong or weak, coarse or fine. This character is never seen in pure pallidas, and is not mentioned as existing in variegata in any descriptions I have seen. It is a distinct character, I feel sure, and not due to the combination of blue hairs and yellow hairs, for I have seen the result of this in my aphylla seedlings, and it is quite different. If, then, this character does not occur in variegata or any of its *wild* forms, it is a very strong indication that there is another species in these flag Irises, and that it is one which has its beard tipped brown, or, more probably, violet or purple.

The other point is the dark purple colouring of the base of the leaves of many varieties. Where does this character come from? As with the tipping of the beard it is never seen in pure pallidas, and I can obtain no evidence of it occurring in variegata. Whatever may be the value of these two characters in the determining of Iris species, at least they cannot, I think, be altogether ignored.

As I have but a slight acquaintance with Iris species, it would be foolish to make any suggestions, except in an inquiring spirit. Two species, however,

appear to me possible. One is aphylla, on account of its tendency to give red coloured (Kochii-like) seedlings, its projecting and comparatively dense beard, and because of the blue *flush* (as distinct from tipping), seen in the beards of many of my Red Pallida seedlings. The other is balkana (or some closely allied species), on account of the dense, violet-tipped beard, and red-toned flowers. The chief difficulty with regard to these species is their time of flowering. This may seem a very immaterial character, but as a matter of fact, it is usually a very strong one, and seedlings from varieties whose times of flowering are wide apart generally flower with almost mathematical accuracy about half-way between. But Red Pallida flowers about 10 days or more before variegata, and if variegata is *also* in Red Pallida this would allow for, or counteract, a species 10 days earlier. Also, I think, judging from some second generation seedlings of a cross with an early species, the time of flowering can be altered by cumulative crossing without any appreciable loss of other characters. Still, one would expect some earlier flowering throw-backs, and I must admit I have not had any. A. J. Bliss.

ORCHID NOTES AND CLEANINGS.

VANDA TERES FOWLER'S VARIETY.

FLOWERING for the first time in the collection of J. Gurney Fowler, Esq., at Brackenhurst, Tunbridge Wells, is a remarkably showy and distinct form of Vanda teres, with flowers 4 inches across. It has a very remarkable feature in the brightly coloured upper segments, which contrast quaintly with the white lateral sepals arranged wing-like beside the large yellow-tinted lip. The upper surface of the petals and the dorsal sepal are bright rosy-mauve, the other side of the petals being slightly lighter in colour and with purplish veining. The lateral sepals, an inch wide, are white, the lower halves tinged with yellow, the upper halves having a slight blush tint. The lip, which is of massive proportions, is yellow streaked with red-brown lines, the apical half of the front lobe being rosy-mauve. There are several forms of Vanda teres in the Brackenhurst collection, including the white form, but this for effective contrast of colour is by far the most remarkable.

THE LIZARD ORCHID.

ON June 20 last a fine specimen of *Oreobis hircina* (Lizard Orchid) was found growing in a chalky pasture near the gardens at Goodwood. I showed the flower-spike in a fresh state to two well-known botanists in Sussex. Both gentlemen said there was no doubt about it being *Orchis hircina*. I am drying the spike, and hope to preserve it to show to anyone interested. I cannot find any records of it having been found in Sussex previously. Hooker's *Flora* gives two counties in which it has been found—Suffolk and Kent. Sowerby's *English Botany* gives, I believe, two localities, and mentions that a specimen (or specimens) was found near Dartford, Kent, about 1863 or 1836.

It would be interesting to learn if the species has been found since then in those or any other localities. F. Brock, Goodwood Gardens, Chichester, Sussex.

NOTES ON CONIFERS.

IX.—CUPRESSUS FUNEBRIS.*

I now come to the Chinese Weeping Cypress, which may be considered among the most ornamental Conifers in cultivation, but it will only succeed in the milder parts of our islands, such as the south and south-west of England, and in Ireland, and is accordingly rarely seen in gardens. In the colder districts the plant is sometimes cultivated in pots in the greenhouse.

Cupressus funebris, which is a native of Central China, appears to have been discovered by Sir George Staunton, who was secretary to Lord Macartney's embassy to China in 1793, in the Vale of Tombs, near Lake Sihoo, but the plate referred to below shows a very pendulous Cypress, and much more weeping than is usually found in *Cupressus funebris*, though there can be no doubt that this is the species intended. It is a native of Central China, occurring in mountainous districts, at elevations usually below 3,000 feet, in the provinces of Szechuan, Hupeh, Anhui, and Chekiang. Henry† points out that Lindley, Masters, and Kent were all in error in describing this Cypress as belonging to Northern China, where the climate is much too cold for it. Fortune‡ gives an account of the tree in the famous green tea district of Huichou, and says that the first specimen he saw had a stem as straight as a Norfolk Island Pine, and pendulous branches like the Weeping Willow.¶ As he journeyed westward it became more common, and had a most striking and beautiful effect upon the Chinese landscape. Wilson§ describes it as the most handsome of all the Asiatic Conifers, as well as one of the most useful. In Central and Western China its timber is used for house building and general constructive purposes, and is also largely employed for boat building.

This tree has been known in China from the earliest times, being called Poh or Peh, a name also applied to other Conifers. Bretschneider|| states that it was planted by the founder of the Yin dynasty about the altars of the spirits of the land. *Cupressus funebris* is well known in the Eastern Himalayas as a planted tree, being often found near temples and monasteries. Sir J. Hooker** mentions a large one in a temple at Doobdi, probably the oldest specimen in Sikkim, at 6,470 feet elevation, which was 90 feet high, with a girth of 16½ feet at 5 feet from the ground.

The date of introduction into England is doubtful, according to Loudon, although Lambert considered it came from South China in 1804. We know for certain that Fortune sent cones to Standish in 1848, from which young plants were raised at his Bagshot nursery. The finest specimen now on record is one at Haldon House, Exeter; in 1908 it was 50 feet high by 6 feet in girth. There is a smaller one at Tortworth, which was about 35 feet high in 1909. A specimen was found at Killerton, cultivated under the name of *Cupressus sinensis*. I have seen trees about 30 feet high at Lamellen, Heligan, and Penjerrick, in Cornwall, and there is also one at Osborne, Isle of Wight. In Ireland there are trees at Powerscourt, Kilmacurragh, and Castle-martyr. The specimen shown in fig. 26 was sent me from Lamellen by Mr. E. L. P. Magor. A. Bruce Jackson.

THE ROSARY.

SOME NEW SINGLE ROSES.

THE progress of our garden flowers seems often to follow a fairly well defined course. The heads of the Chrysanthemum gradually increased till those of the Japanese varieties attained a size so great as to become coarse; when this occurred taste inclined in a different direc-

changed and the massive heads were followed first by the Cactus Dahlia and then by the return to popularity of the single forms.

We need feel little surprise if the progress of the Rose should follow somewhat similar lines, and this appears to be the case. The process is slower, for it takes many years to raise and bring out a new Rose, but the path traversed differs little save in time.



[Photograph by E. J. Wallis.]

FIG. 26.—CUPRESSUS FUNEBRIS, FROM LAMELLEN, CORNWALL (ONE-THIRD NATURAL SIZE).

tion, and single or nearly single varieties became popular. The heads of the double Dahlia waxed great until, if we may credit the story of a certain battle of flowers reported to have taken place in one of our northern towns, they were found effective missiles by some of the more strenuous combatants. Here, again, taste

The exhibition Roses have become larger each year, for the prizes are awarded to size rather than beauty, and the method of setting up the flowers is stiff and tiresome in its uniformity, while it gives no idea of the probable appearance of the flower in the garden.

The result is that the public who visit our

* *Cupressus funebris*, Endlicher, *Syn. Conif.*, 58 (1847); Masters in *Journ. Linn. Soc. (Bot.)*, XXXI., 337 (1896), and XXVI. 549 (1902); Kent, *Fitch's Man. Conif.*, 203 (1900); Elwes and Henry, *Trees of Great Britain and Ireland*, V., 1162 (1910); Clinton-Baker, *Illustr. Conif.*, III., 60 (1913); Bean, *Trees and Shrubs*, I., 443 (1914).

Cupressus pendula, Staunton, *Embassy to China of Earl Macartney*, II., 525, pl. 41 (1798); Lambert, *Genus Pinus*, II., 124, t. 66 (1832); Loudon, *Arb. et Frut. Brit.*, IV., 2479 (1838).

† *Loc. cit.*, V., 1163, note 1.

‡ *Gard. Chron.*, 1859, p. 228.

¶ The tree is fancifully depicted in the old willow-pattern china.

§ *Gard. Chron.*, XXXVIII., 94 (1905).

¶ *Bot. Sinicum*, II., 336, 381 (1902).

** *Himalayan Journals*, I., pp. 316 et seq. (1834).

shows are becoming more and more attracted to the decorative groups and stands, where there is scope for variety and taste in arrangement, and are rather disposed to neglect the serried ranks of single upright flowers in the exhibition boxes. This was particularly noticeable at Leamington, where the provincial show of the N.R.S. was held this year, under the auspices of Mr. Franklin Dennison. Here the exhibition flowers had been collected into one tent and the decorative groups and stands were placed in another, and (a little unfortunately, as it turned out) narrower tent, the new seedlings occupying a third tent. The two latter appeared crowded all day, and perhaps few things excited more appreciation and comment than a wonderfully beautiful group of the single Rose Princess Mary (see fig. 135, *Gard. Chron.*, May 2, 1914, p. 304), set up by Mr. Elisha Hicks, in a stand that contained many fresh and delightful flowers.

At the London shows in the Botanic Gardens and in the City the beauty and novelty of many of the single Roses attracted great attention from the visitors, to many of whom the appearance of a single Rose at a show was evidently quite unfamiliar, and the comments passed upon them were often both interesting and amusing.

The raisers of new Roses have not been slow to follow the development of public taste in this matter, and the tendency in this direction is reflected in the new seedling Roses seen at our Rose shows. The single Rose Cupid, as staged by Messrs. B. R. Cant, is undoubtedly a thing of beauty. The petals are large and of a very delicate pale, soft pink, with a shade of yellow, which is perhaps enhanced by the bright yellow of the anthers. The flowers appear to be carried in bunches of eight or ten blooms, and the growth seems strong and upright. Messrs. Paul and Son have shown a very distinct single form in Naiad. Here the flowers are also a soft pink, but deeper in colour than Cupid, and have very large petals with red anthers, which give it quite a novel appearance. It is very beautiful both in the bud and the open flower, and in habit seems suited for growing as a big bush. Queen Alexandra (see fig. 5, *Gard. Chron.*, July 3, 1915, p. 12) is another new single Rose, brought out by the Rev. J. H. Pemberton. This must not be confused with a climbing Rose of the same name introduced by Messrs. Veitch in 1901. The new Rose is perpetual flowering and of bushy habit, and the flowers are very pleasing when fresh, the petals being of a pale lemon tinted blush, which form a good background to the yellow stamens.

Cherry Page may also be classed as a single Rose; it was introduced by Mr. W. Easlea. The colour is unique and lovely when fresh; it has been called cerise-pink, but it has no blue in it, and perhaps cherry-pink is nearer, while a faint tint of yellow helps to light it up.

Mrs. Rosalie Wrinch is another beautiful pink, single Rose that has been well shown by Messrs. W. and J. Brown. The habit of the plant is strong and upright, and the effect is pleasing. Not unlike it in colour is Salmon Queen. Mr. Frank Cant has exhibited this with success on several occasions, as well as Rouge d'Angvine, a bright crimson single Rose of very dwarf habit, brought out in 1908 by M. Guinoisseau. Of bright crimson, however, perhaps Princess Mary of Mr. Hicks and Red Letter Day of Mr. Hugh Dickson are the most noticeable. In the garden the latter flower is so bright for the couple of days the flower lasts that it catches the eye whenever one approaches it. Ulster Standard and Ulster Gem, also shown by Mr. Hugh Dickson, are worthy of notice. The same raiser obtained a Gold Medal at Leamington for a semi-double flower called Golden Spray, creamy-yellow in colour, Messrs. McGredy and Son securing a like award for a very beautiful single Rose called Isobel.

Perhaps it is to Messrs. Alex. Dickson and Sons more than any other raiser that we are indebted for helping us to realise the garden value of the single Rose. Irish Beauty, the first of the series of single Irish Roses introduced by this firm, was brought into notice in 1900, and thence forward one or more appeared annually. Irish Elegance (see fig. 52, *Gard. Chron.*, February 24, 1912, p. 121), perhaps still the best of the group, coming in 1905, and Irish Fireflame in 1913 (see fig. 156, *Gard. Chron.*, May 31, 1913, p. 365). The latter comes within the scope of this article and is certainly a very striking flower. In form it much resembles Irish Elegance, but the pink is replaced by red and the yellow is more decided. The result gives us a harder colour than the delightfully soft shades of Irish Elegance, but for decoration it is extremely effective and always attracts notice. A semi-double flower of new and bright colouring was shown by the same raisers at Leamington, and though it did not actually secure an award it must have come very near to one.

The Roses mentioned above are sufficient to show the direction in which popular taste is moving, and the list might be increased. Silver Moon, Adrian Riverdron, Pink Pearl, and Mrs. A. Kingsmill, with many others, are all beautiful in their way and of recent introduction, and we have clearly a large number of forms from which we may now select. It is therefore incumbent on us to determine their value for the decoration of the garden, for this must ultimately be the criterion by which every Rose will stand or fall.

In considering the value of single Roses for this purpose it is to be remembered that in order to show a single Rose in perfection it must be picked before it is fully out and allowed to open indoors for the full beauty of the anthers to be seen. Consequently out-of-doors the flowers have but a short life, and to make a good garden plant they must be produced in tolerable quantity and in rapid succession over a considerable period. They are, it is true, not so likely to be destroyed by rain, and to refuse to open, as is the case with fuller flowers. A single Rose seldom suffers in this way, but it is of considerable importance that the petal should be of good substance and lasting power, and if the buds are to be kept in good order so as to look their best much attention in the removal of the old and faded flowers is demanded.

In the case of the climbers, on the contrary, where the constant removal of flowers that have faded is out of the question, there is some advantage in flowers which will shed their petals quickly as they go over.

In order to secure quantity and continuity of flowers, free and rapid growth and a good branching habit are essential, while it is generally desirable that the flowers should be carried in fair-sized trusses, so that one may open as another goes off. A single Rose that bears only one or two flowers on the top of one upright stem is seldom of much value in the garden, and for decoration such a large number of plants would be necessary that the amount of room occupied by them would in all probability be excessive for most gardens. A good carriage of the flowers, so that they are held well above the leaves, and strong and abundant foliage of a good colour to set them off, are qualities that are scarcely less necessary.

All this, it may be said, is truism; but how are we to estimate the qualities of a Rose in these respects without seeing it grow either in our own or our friends' gardens? In strictness it is doubtless true that only in the garden can the final test be applied, but a good deal of information may be gathered as to the character and habit of the plant on which the flowers grew even when examining them at a Rose show. To obtain this we must by no means confine our attention to the beauty of the flowers shown, but should examine the foliage

carefully, also the number of flowers on a truss and the way in which they are carried on the stems, and whether a wire must be used to keep them upright. Besides this the strength and appearance of the stems and the number and characters of the thorns they bear, the size of the leaves, and the smoothness or roughness of their surface, and sometimes the form and character of the stipules, will also help to enable us to make a tolerable guess as to the class of plant to which the exhibit belongs. Many, perhaps most, confine themselves to a consideration of the beauty of the flower, and find themselves disappointed when they buy a plant which differs from their expectation, and is perhaps unsuited for the position they had designed it to occupy.

From exhibition Roses staged in boxes with their heads tied tightly to a wire stake, it may be very difficult to extract much information of this kind; but decorative Roses are fortunately not set up in this manner, and the National Rose Society's rules direct that the flowers shall be arranged in the decorative classes so as "to show as far as possible the foliage and habit of growth of each variety." No doubt this regulation is often broken, and unfortunately sometimes with impunity; but it is not wholly without effect, and the careful observer may learn much of a new Rose from a thorough examination of the flower-leaves and stems. *White Rose.*

PRELIMINARY NOTE ON SOME SPRAYS FOR AMERICAN GOOSEBERRY MILDEW.

IN recent years considerable attention has been paid to experiments in the control of American Gooseberry Mildew by spraying. Most of the experiments have been done with lime-sulphur solutions, and comparatively little attention has been paid to the possibility of utilising other solutions. Further, much of this recent work has been devoted to ascertaining what action lime-sulphur has upon the bushes themselves. However effective this spray may be as a preventive, the fact that certain varieties are adversely affected makes its general adoption somewhat doubtful, and renders it desirable either to secure some modification of its formula which will ensure a wider range of application, or else to obtain some other substance which will be equally effective and capable of more general use on all varieties.

This problem has engaged the attention of one of us for some time past. From an extended chemical examination of the lime-sulphur wash, it appears that the active sulphur must be provided by the polysulphides of calcium. This is in a very loose state of combination, and in fact may be regarded largely as sulphur in solution. The wash is also strongly caustic, due to the hydrolysis of these polysulphides. Reasoning from this, and without exact experimental biological evidence, it seemed that the lime-sulphur wash might profitably be replaced by two washes, viz., an alkaline solution and a neutral sulphur wash. These could be used at different times, in order (1) to avoid injury to the trees or bushes, and (2) to combat the summer stage of the mildew with active sulphur without affecting the fruit.

In the neutral sulphur sprays, two washes were employed which will be described in detail elsewhere. The first, "Colloidal Sulphur No. 1," is a true colloidal solution of sulphur obtained by the interaction of sulphur dioxide and hydrogen sulphide, the acid liquid being neutralised by ammonia. This solution was tested in 1913 upon a number of plants, in order to ascertain what injury, if any, might result from its use. The plants tested included Apple, Pear, Peach, Gooseberry, Red Currant, Strawberry and vine. No scorching or leaf-fall resulted. The preparation of this solution, how-

ever, involved certain technical difficulties which rendered its practical adoption temporarily impossible.

"Colloidal Sulphur No. II." is prepared by precipitating lime-sulphur solution with acid in presence of gelatine under suitable conditions. It has been tested fairly extensively, and is easy to prepare. The wash as used is a neutral, opaque, milky fluid, which will pass through filter paper. The sulphur does not separate from it within a week of preparation, and the wash has been kept a month or more without complete precipitation of the sulphur. As prepared for these experiments, it was diluted to six times the original, and the final wash approximately corresponded in content of sulphur with the lime-sulphur washes used.

At the same time, one of us, in the course of certain laboratory trials, came to the conclusion that ordinary commercial soda might also be of service. This idea was strengthened by finding that the Institute of Phytopathology, Petrograd, after repeated trials, had come to the conclusion that this substance had certain merits beyond all others tested. Accordingly, soda and borax were employed for the alkaline sprays. A series of ten tests was finally arranged:—

- I.—Colloidal Sulphur No. II.
- II.—Lime-sulphur 100: 233: 100.
- III.—" " 100: 200: 100.
- IV.—" " 100: 100: 100.
- V.—Precipitated lime-sulphur.
- VI.—Soda.
- VII.—Unsprayed.
- VIII.—Borax.
- IX.—Ordinary lime-sulphur (commercial).
- X.—" " "

The experiments were conducted at Mr. Lobjoit's Heston Farm, Heston, Middlesex. The varieties were Whinham's Industry and White Lion, 25 bushes of each being used in each of the above series. The bushes were from 6-8 years old, of strong growth, closely planted, and partially shaded by the Plums and Apples, between which they had been planted. Before the experiments commenced the bushes had been attacked by mildew, which threatened to be more severe than any previous attack. A light spraying with lime-sulphur had been given early in the year, but when the first experimental spraying was conducted there was little evidence of the previous spraying on the bushes, and the disease was making considerable headway.

The lime-sulphur solutions No. II., III., IV., V., IX. and X. were used at a specific gravity strength of 1.01. The soda and borax solutions were made up at the rate of 3 lbs. to 100 gallons of water, flour or size being employed to increase the adhesiveness at the rate of 1 lb. of either to 100 gallons of solution. All the solutions were prepared at University College, Reading, and conveyed to Heston by motor-cycle, with the exception of Nos. IX. and X., which were prepared from ordinary commercial lime-sulphur.

As the experiments were purely of a preliminary nature, two sprayings only were attempted. The first of these was carried out on May 26, the day being bright and sunny but somewhat cold. The second spraying took place on June 24, which was somewhat dull and cloudy, with a high temperature. The bushes were carefully examined on May 27 and 28, June 4, 16, 22, and 24; July 3, 13, 20, 29; August 10, 20, 26; and September 10 and 24. Throughout the whole period no spray injury whatsoever was noted upon the Whinham's. All the lime-sulphurs caused a slight scorching of many of the White Lions, but no leaf-fall took place. The remaining solutions had no injurious action.

The growth of the bushes was somewhat uneven. Generally speaking the White Lions were much more vigorous than the Whinham's, and formed a thicket so dense that accurate observations could only be made under considerable

bodily discomfort. The whole of the rows, however, were practically identical. This was not the case with the Whinham's. Rows I. and X. showed, unfortunately, the least growth. In descending series, i.e., starting with the bushes which showed maximum growth, the rows were classed as follows:—

- (a) Rows VI. and IX.
- (b) " II. and III.
- (c) " IV., V., VII., and VIII.
- (d) Row X.
- (e) " I.

Since the individual bushes varied, and the difference between some of the rows was not marked, the above can only be regarded as an approximate grouping.

Throughout the whole area, both on Whinham's and White Lions, it was obvious that the sprays, with the exception of the borax solution (which was only applied in July for the purpose of testing its covering power), had (under the conditions of the experiment) served to check the further spread of the mildew.

For the reasons already suggested, it was found impossible to gain definite figures from the White Lions. In the case of the Whinham's, however, conditions were more favourable, and on July 29 it was decided to count the number

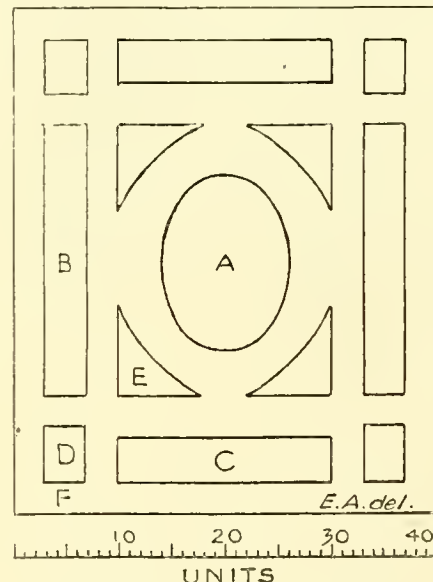


FIG. 27.—DESIGN FOR AN IRIS PARTERRE.

Scale: One unit equals one-eighth inch.

of diseased shoots in each row, and so gain more definite statistics. The results were as follows:

Series.	No. of diseased shoots.*
No. 1. Colloidal sulphur II.	32
3. Lime-sulphur 100: 200: 100.....	38
5. Precipitated lime-sulphur	41
6. Soda	60
4. Lime-sulphur, 100: 100: 100.....	93
10. Commercial lime-sulphur	178
9. "	202
2. Lime-sulphur, 100: 233: 100	228
7. Unsprayed	800

Alongside of these figures there must be set the growth tables, since otherwise a somewhat exaggerated deduction might be made. In addition 15 shoots on Row I (Colloidal lime-sulphur) were marked as being definitely attacked by the mildew. On July 29 all trace of this mildew had disappeared.

It should further be noted that the soda solution, in addition to checking the disease, im-

* These figures throughout are considerably lower than those obtained by Salmon, *Journal of the South-Eastern Agricultural College*, No. 22, 1913.

proved the general appearance of the bushes, and did not mark the fruit.

A number of shoots was taken from each of the rows on June 24, July 29, and August 10, and examined microscopically. Perithecia were found on the shoots from the unsprayed rows on June 24, but not on the others. On July 29 they were abundant on this row, and could be seen with the naked eye without any difficulty on all the bushes.

They were also present on all the bushes of the remaining rows, but in greatly reduced numbers. This was most obvious in rows Nos. 1, 3, 5, 6, and 4, where the mildew at this date was still largely in the summer stage. Throughout August and September very little further growth of the bushes took place, and as a consequence there was very little new infection throughout these months.

Conclusions.—Under the conditions present in these trials, it may be said:—

1. That the action of the mildew was checked by the use of colloidal sulphur No. 2, precipitated lime-sulphur, various lime-sulphurs and soda.

2. That these sprays also seemed to defer the formation of the perithecia, and

3. That these experiments—being conducted on a limited scale—cannot be regarded as in any way conclusive, but are of such a nature as to warrant more extensive and more detailed trials.

These trials are accordingly being repeated—

- (a) on a larger number of varieties,
- (b) under varying conditions,
- (c) with more frequent applications of the above and certain additional sprays, ranging from two applications upwards. Further, certain of the sprays are being used in combination, commencing early in the year with a sulphur wash, followed later by an alkaline wash, and still later by the original sulphur wash. *J. M. Hector, B.Sc., and S. J. M. Auld, D.Sc., Ph.D., F.I.C., University College, Reading.*

NOTES ON IRISES.

A DESIGN FOR AN IRIS PARTERRE.

IRISES are beginning to come into their own. No well-planned herbaceous border is now complete without a series of clumps of the easily-grown Flag Irises.

This is well; but what is better is that Irises should have a bit of the garden to themselves. Grouped together, with a selection of the right kinds, an Iris parterre will be a joy to the eye from mid-April to mid-July, peopled by the lesser and greater Flags, with a sprinkling of the Spanish and English bulbs.

The difficult ones, and those flowering at other seasons, are not included here, as the object of the scheme is to have a display of colour with the orderly succession of vigorous varieties.

As for situation the parterre must be exposed to full sunshine and have no trees near to shade the plants and rob the roots. The plan shown in fig. 27 is a parallelogram, longer than broad; and if the proportion of the beds is kept it may be made of any size to suit the style of the garden of which it forms part. Whether it is placed on an open lawn or enclosed by a low Yew hedge may be left to individual taste. The same latitude may be shown with regard to the spaces between the beds; turf is more seemly, but gravel or brick or stone paving may be substituted.

For the kinds of Iris chosen for the parterre the soil required will be a well enriched loam, with lime worked in where the soil does not naturally carry that constituent.

It is now fairly well understood that the rhizomatous or Flag Irises require to be planted near the surface, so that the root stocks should be well ripened in late summer after flowering; also that they should be lifted at that period

about every three years in order to remove the old dead rootstocks and so lessen the danger of disease, and to renew the exhausted soil. In winter, when the withered foliage has been cleared away, a very light top-dressing of leaf-mould with a sprinkle of lime is beneficial.

Now for the selection of plants:—

1. The four small three-cornered beds are for the early dwarf-bearded Irises, which are usually inaccurately termed "pumilas," whereas most of them are forms of *Chamaeiris* and *aphylla*. The dwarfest, the true *pumila coerulea*, a lovely China blue, should border the inner edge of each bed; the rest of the space should contain clumps of the yellow and purple forms of dwarfs, of which there are many pretty shades. These flower from mid-April to mid-May. Between the clumps space should be left to dibble in a number of Spanish Iris bulbs of mixed colours; these will flower from the middle to the end of June.

2. The four corner beds are for the beautiful intermediate bearded Flags; a charming new race which flowers during most of May, filling the gap between the early and late Flags. Some of the best kinds are *Ivorine*, *Queen Flavia*, *Dolphin*, *Mars*, *Brunette*, *Odin* and *Charmant*; the colours are artistic blendings of French grey, red-purple, pale lavender, light yellow and ivory. These clumps should be spaced so that bulbs of mixed colours of English Irises (*I. xiphoides*) may be scattered between them. These last will flower from the end of June to mid-July.

3. The four long narrow beds are for clumps of the tall late Flags which begin in mid-May and continue till nearly the end of June. The clumps should each occupy the whole width of the bed, and should be arranged for colour effects, those that flower together being placed in juxtaposition. For example, the early-flowering white *florentina* and the early dark purple *germanica*; next come the mauve *pallidas* with the light yellow *flavescens*; and then the different shades of the later-flowering varieties—the variegatas (yellow standards) contrast with the neglectas (blue standards), and the *amoenas* (white standards) with the *squalens* (dull lilac standards). There is a large choice in this group of Irises, and selection may be guided by personal predilection; among the most attractive and floriferous forms are:—*germanicas*: Purple King, Troyana and Kharput; *pallidas* (sweet-scented): type and Princess Beatrice, Samnite and Celeste, and several other newer hybrids, the pink forms *Her Majesty* and *Queen of May* are not so hardy; *Yellow Species*, *flavescens*; *apicata* (frilled blue and white), *Mme. Chereau*; *amoenas*: Mrs. Darwin, Bridesmaid, and Thorbeck; *squalens*: Plumieri, Geertii, Jacquinianna, Prosper Laugier and Pfauenauge; *neglectas*: Harlequin Milanais and Black Prince; *variegatas*: Gracchus (early), *Mme. Neubronner*, Darius, aurea, Innocenza, Iris King, Princess Victoria Louise and Maori King. The variegatas are mostly late and should be grown in quantity, as they are among the most brilliant and daring in their colour contrasts.

4. The central bed should be planted for effect as being the focus of the parterre; all the middle being occupied by groups of the tall flags with narrow green or glaucous leaves. Such are *ochroleuca*, *Monnieri* and *aurea*, in white, pale yellow and gold; *spuria*, in shades of blue, and several good hybrids between these. They will be in flower from mid-June to mid-July, and grow from 4 to 5 feet high. In a wide border all round the bed will be large clumps of Spanish and English Iris alternately, each of a separate colour, the Spanish flowering a fortnight before the English. Some of the "Dutch" varieties of Spanish Iris are desirable, as they flower still earlier, and are of large size and good substance. *Elcanora* *Armitage*.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables, Supplement, Gard. Chron., July 24, 1915.)

(Continued from page 63.)

2. ENGLAND, N.E.

YORKSHIRE.—In the course of my travelling this summer through the fruit-growing districts of Yorkshire, I have noticed that fruit crops vary considerably in quantity of produce. Here and there in gardens and orchards there is an abundance of fruit, whilst in other gardens there is very little. Small fruits were much infested with aphides, but recent heavy rains have cleared them. Black Currants are disappointing. *Alfred Gaut, Leeds.*

—Some varieties of Apples are carrying very large crops, including Bramley's Seedling, Lane's Prince Albert, Duchess of Oldenburgh, James Grieve and Ecklinville Seedling. Pears are up to the average, but Plums are scarce. All bush fruits, with the exception of Black Currants, have yielded good crops. Strawberries, especially the varieties Wonderful and Fillbasket, are exceptionally good. Of Apricots there is only a poor crop. *A. E. Sutton, Castle Howard Gardens, Welburn.*

—Our garden being on the top of a hill, the six weeks of drought spoil the prospects of the Strawberry crop. There seem to be more pests than usual, owing to the mild winter and lack of the use of stringent preventive measures owing to depletion of staff. Copious waterings saved the Pear crop, and rain during July did much good to the Apples. *J. G. Wilson, Chevet Park Gardens, Wakefield.*

—April frosts damaged the Plums and slightly affected the Pears. Small fruits have been inclined to drop owing to the drought, but the rain came in time to improve the outlook. Insect pests have been very troublesome, necessitating frequent sprayings. *F. C. Puddle, Scampston Hall Gardens, Rillington.*

—Considering the dry weather, the fruit crops in this district are most satisfactory. Apples, Pears and Plums (Victoria) are yielding large crops, and bush fruits an average one. Strawberries were of excellent quality, but suffered from the drought. Fruit trees on walls are carrying good crops, with the exception of Apricots, which suffered from severe frosts at the end of March. *Charles Fulford, North Riding Asylum, York.*

—There was a great deal of blossom on all kinds of fruit trees, but the season has been a trying one. The weather was bright and dry when the trees were in bloom, and notwithstanding a prolonged period of cold nights and a continuance of north-east winds, the fruit crops are looking satisfactory. The prolonged drought has had a most serious effect on small fruits, and the trees have suffered much from attacks of insects. Apples, Pears and Plums have been much affected by maggot, but rains at the end of June washed the trees clean, and a marvellous improvement has been effected. *F. Jordan, Warton Priory Gardens, Pocklington.*

3. ENGLAND, E.

CAMBRIDGESHIRE.—The drought of 1915 was exceptionally severe, and the trees in this garden—being on marshy silt—canker quickly. There is a shortage of keeping Apples, Bramley's Seedling, Lord Derby, and Lane's Prince Albert being scarce. Pears are plentiful. Of Plums there is a plentiful crop of Early Rivers; the variety Louvaine is scarce, and the Victorias vary considerably, the lower boughs yielding better than the upper; the late frosts have damaged the crop. Raspberries were plentiful. The general cropping of this district is variable. Potatoes were cut down to the ground by frost on June 24. *Stephen Castle, Walpole St. Andrews, Wisbech.*

—Although we have about a dozen Apricot trees, there is not a single fruit on one of them. We have an exceptional crop of Red Currants and Gooseberries, but Cherries have failed to swell owing to the dry weather. Our soil is of a heavy nature, and seems to suit small fruits. *H. Head, Hatby Park Gardens, Sandy.*

—Black Currants suffered severely from frosts at the end of March. Strawberries promised well, but the drought during the early part of June injured both plants and fruits; later varieties benefited by the rain on June 30. Apples in many instances have been badly attacked with aphid and Apple-sucker. *A. Sewell, The Palace Gardens, Ely.*

ESSEX.—The fruit crops, with the exception of Plums, are remarkably good and clean. We experienced no late frosts while the trees were in bloom, and aphid has not been so troublesome as in some years. The prolonged drought of six weeks' duration gave us cause for great uneasiness, but the last days of June brought welcome showers, from which the trees have greatly benefited. Standard and bush tree Plums bloomed freely, but the crops failed to set and are a complete failure, though trees on the walls are bearing satisfactorily. The soil is strong clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

—The Apple crop in south-east Essex promises to be an abundant one. Trees growing in stiff, low-lying situations are clean and vigorous, and are carrying heavy crops of good fruit. Trees on light land well above the natural water-line show the effects of the long spell of dry weather during the last two weeks of May and the entire month of June. Pears are a good crop, both trees and fruit being clean and healthy. Cherries are also bearing good average crops; but Plums, on the whole, are less plentiful. Strawberries and bush fruits are plentiful. *H. W. Ward, Rayleigh.*

—Notwithstanding the heavy, retentive soil, the fruit crops suffered from the drought. Late frosts damaged the Strawberries when in bloom, but rain came in time to swell the late fruits. *Edwin Guile, Short Grove Gardens, Newport.*

—The fruit crops are good, on the whole, but Apples have suffered very much from blight. The soil here is of good loam resting on about 4ft. 6in. of brown clay and stone drift. *S. T. Martin, Stisted Hall Gardens, Braintree.*

—The Apple crop is a large one, although the damage done by hail storms is considerable. Plums are almost a failure, with the exception of a few Victoria trees, which are yielding a fair crop. Small fruits are rather under the average, and Gooseberries are very scarce in some localities. Strawberries were almost a failure, the early blooms being cut off by frosts, and the drought also did much damage. Nuts seem likely to yield a good crop. *W. Johnson, Stansted Hall Gardens, Stansted.*

HUNTINGDONSHIRE.—Six weeks of drought prior to June 25 ruined the Strawberry crop. Apricots are scarce, partly owing to inclement weather when the trees were in bloom, and partly owing to the heavy crops which the trees bore last year; 13° of frost were registered on the mornings of March 29 and 30, and it is remarkable that Pears and Plums did not suffer more severely. *A. V. Coombe, Ramsey Abbey Gardens, Ramsey.*

—Late frosts damaged the Apricot blossom and Strawberries were injured by drought in May and late frosts. Our soil is heavy, with a sub-soil of clay. *G. H. G., Huntingdon.*

LINCOLNSHIRE.—Fruit blossom was very abundant, and there are good fruit crops, with the

exception of Cherries and Apricots, which failed to set. Bees are few in this district, and we attribute the non-setting to this fact. Strawberries promised well, but the long-continued drought prevented the fruits from attaining good size. Small fruits, especially Loganberries and Raspberries, are yielding good crops. *F. J. Foster, Grimsthorpe Castle Gardens, Bourne.*

— Apples are doing well, but Cherries and Plums are very scarce. I think the low temperature for so many nights in the spring caused the fruit to drop. Most trees are growing well, in spite of dry weather. Strawberries were small, and the season a short one. *H. Finden, Harlaxton Manor Gardens, Grantham.*

— Fruit trees generally flowered well, but we experienced 12° of frost on three successive mornings during the flowering period of Peaches and Apricots, which destroyed the flowers, in spite of the protection afforded them. The soil is light loam on a sand sub-soil. *E. C. Norris, Elsham Hall Gardens, Grimsby.*

NORFOLK.—Owing to drought, aphid has been very troublesome, especially on Black Currants. The Strawberry crop was a short one, but the fruit was good and very bright in colour. Apples are very promising, but Plums are below the average, probably due to the heavy crops the trees bore last year. *H. Goude, East Dereham.*

— There are exceptionally good crops of Apples and Pears, this being the third consecutive season for such heavy crops. In many places Plums are almost an entire failure. Small fruits vary considerably, and Strawberries failed owing to a lack of rain. *William Orr, High House, Church Road, Downham Market.*

— Rain fell in time to enable the Apples and Pears to swell. Strawberries were seven days later in ripening than in 1914. The wind was in the east and north-east for more than three months. Our soil is of a light nature, with a gravel sub-soil, varying in depth from 18 inches to 3 feet. *Isaiah Johnson, Catton House Gardens, Norwich.*

SUFFOLK.—The Apple crop promised to be exceptionally good this season, but the trees were badly infested with caterpillars during the dry weather, which caused the dropping of a great quantity of fruit. Pear trees bloomed abundantly, but failed to set their fruits well. Late frosts destroyed a good deal of the bloom of the stone fruits. Small fruits are yielding heavy crops, of good quality. Our soil is of a calcareous loam on a gravel sub-soil. *Thomas Stiling, Livermere Park Gardens, Bury St. Edmunds.*

— East winds were very prevalent this spring, and the frosts in May seriously affected our early crop of Strawberries, though the later varieties have given good crops of splendid quality. Plums and Apricots are below the average. Fortunately the Apple and Pear blossom suffered no ill-effects from the frosts, and the prospects for good crops are excellent. Bush fruits, especially Black and Red Currants, are abundant. American mildew, notwithstanding remedial efforts, still seems to make headway in this neighbourhood, and several small growers have destroyed their Gooseberry bushes and given up the cultivation of this crop. *James Hilsen, Flinton Hall Gardens, Bungay.*

— A wealth of fruit blossom led us to anticipate good crops, but forty days' drought encouraged blight, which has destroyed much of the foliage, and the shrivelled fruit has fallen in abundance. However, the Apple and Pear crops will be up to the average; but Plums are scarce. Raspberries are plentiful, but Strawberries suffered from drought. On the whole the fruit season, which promised to be above the average, is somewhat disappointing. *R. Evans, Great Barton Gardens, Bury St. Edmunds.*

(To be continued.)

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

MELONS.—Plants intended for late fruiting should now be permanently planted or potted into their fruiting pots, and every encouragement given them so that they may set fruits whilst there is still plenty of sunshine. Attend to the timely pinching of the shoots, and endeavour to get a good number of the female flowers fully expanded, it being desirable that the whole crop be set on each plant at least within twenty-four hours. When the desired number of female flowers has been secured and the flowers are pollinated, the side growths should be constantly pinched to one leaf beyond the fruit. If this is duly attended to it will prevent any overcrowding of the shoots, and consequently throw all the energies of the plants into the fruits. As soon as the fruits start swelling they should be supported to prevent any undue strain on the vines. Watering and feeding must be given even more care than was necessary in the earlier batches. Experienced growers will be guided in this matter by the strength of the plants. Syringe the plants and damp the borders and paths twice daily in fine weather, and close the house early in the afternoon to conserve the sun's heat.

MUSCAT GRAPES.—Any bunches still hanging in the early house should now be cut and placed in bottles in the fruit-room. This will not only relieve the vine of a certain amount of strain, but will enable the house to be thrown open for the better ripening of the growths. Later houses will require careful management at this time, especially in dull and sunless weather. Should the berries be somewhat late in colouring it will be necessary to increase the amount of artificial heat and the amount of ventilation. Where these late Muscats have outside borders these must be protected from heavy rains either by wooden shutters or sheets of galvanised iron.

WASPS.—From the number of nests already found it is evident that in order to prevent unnecessary damage to indoor fruits every nest must be destroyed. A systematic search of the grounds in the vicinity of fruit-houses should be made, and each nest found should be carefully marked, to be dealt with at nightfall. Those bag-like nests that are found suspended from trees can be most effectively destroyed by pouring a small quantity of paraffin oil into the opening. It is by no means necessary to set this alight; indeed, to do so would assuredly burn and otherwise disfigure the branch. However careful a search is made, there is sure to be quite a number of nests left undiscovered, and consequently means must be taken to protect choice fruits. The fixing of canvas over the ventilators is fairly successful, but somehow or other wasps seem to find a way inside. In some instances it is necessary to protect each bunch of Grapes and each Pear in small bags specially made for the purpose. But as this cannot be done with Peaches the canvas must be fixed securely over the ventilators, and frequently examined to see that it has not become displaced.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORT, Esq., Duffryn Gardens, near Cardiff, South Wales.

THE ROCK GARDEN.—Many plants used for the rock garden may be propagated now, either from cuttings, layers, or division of the root-stock. Insert the cuttings in a bed of about 6 inches deep of clean sand, and cover them with small frames or handlights. Keep the sand wet, spray the cuttings frequently, and lightly shade them during the brightest part of the day. Immediately the cuttings are rooted they should be potted into small pots, placed in a frame and

kept close for a time. The cuttings of some plants, including *Lithospermums*, *Rock Pinks*, *Androsace lanuginosa*, and *Helianthemum*, root best if detached with a heel of the old wood. Others, such as varieties of *Iberis*, *Codonopsis ovata*, and *Cyananthus*, strike well if they are made from about 3 inches of young growth. For *Daphne*, *Ledum*, *Dryas*, *Shortia*, *Gaultheria*, and dwarf *Phlox*, layering is the best method of propagation. The heavy rains in some parts of the country may have washed away the material used as top dressings, leaving the stems of many plants bare; this must be replaced at once. Plants which have overgrown their space and are encroaching on others must be clipped back. Seedlings should be pricked out as soon as they are large enough to handle.

PRICKING OUT.—If not already done no time should be lost in pricking out thinly seedlings of spring bedding plants, such as *Wallflowers*, *Polyanthus*, *Myosotis*, *Alyssum* and any biennials. Give them unremitting attention afterwards in the way of weeding, hoeing and spraying, so as to ensure strong, healthy plants for setting out in the autumn.

DELPHINIUM.—Remove the faded bloom spikes from *Delphiniums*, except those required for seed. The latter, when ripe, should be sown in boxes and in a frame, pricking out the seedlings when fit. Feed the plants which have flowered with manure water, or a concentrated fertiliser, and thus encourage second growth, which will give a fair display of bloom later.

HEDGES.—Evergreen and deciduous hedges should be given their final pruning or trimming during the next fortnight, then the subsequent growth will have time to harden before winter. Large-foliaged subjects, such as *Laurel* and *Aucuba*, should be pruned with a knife, if this can be managed, for if clipped with the shears many leaves will be cut through, and an unsightly effect result. Any specimen of a shrub or Conifer may also have unnecessary growths shortened. Hedges greatly benefit if the roots can be given a thorough watering two or three times during the summer, as it is impossible for them to have the full benefit of the rainfall. In a moderately dry summer it is necessary to water to ensure free growth. The soil must first be loosened with a fork, and, after soaking it with clear water, follow later with another of liquid manure or a good fertiliser in solution.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

CATTLEYA.—Such species as *C. Dowiana*, *C. D. aurea*, *C. Warscewiczii* (syn. *gigas*), with its variety *Sanderiana*, and the hybrid *C. Hardyana*, are maturing their flowering growths, and should be only moderately supplied with water until after the spikes are removed, and the pseudo-bulbs matured. It will be noticed occasionally that the sheath encircling the new bulb contains a certain amount of moisture, which, if allowed to remain, may cause the pseudo-bulb to turn black and decay. Split the sheath from top to bottom with the point of a sharp knife to allow the moisture to escape; if several plants are affected in this way, keep the atmosphere drier for a few days, and reduce the amount of water at the roots, but do not withhold water to such a degree as to interfere with the further development of the plant. Where a pseudo-bulb has decayed through the cause mentioned, remove it at once, or the whole plant may die. Sometimes it is possible to save the shoot if the mischief is detected early, by scraping away the decayed portion and filling the cavity with powdered charcoal or sulphur. These *Cattleyas* need a little more sunshine than other members of the *labiata* group, and especially *C. Warscewiczii*; for this reason the plants are often suspended from the roof-rafters of the *Cattleya* division. About a week or so after flowering, *C. Warscewiczii* may be repotted or top-dressed. I am not altogether in favour of top-dressing this *Orchid*, but there are isolated cases where it is an advantage. As a rule, when a plant requires fresh rooting material it should be repotted. The details as to compost and potting were given in the issue for April 24. If the plants are

not over-watered they will become well established before the winter, and be in an excellent condition for producing a fine display of flowers next season. Plants that are not disturbed should be encouraged to consolidate their pseudo-bulbs by standing them where they will be exposed to light and air. These remarks apply also to *C. Dowiana aurea* and its numerous hybrids.

EPIDENDRUM.—This is a very variable and large genus, but it contains only a few plants of horticultural merit, including the group with more or less flexuose stems. This section embraces *E. radicans*, *E. xanthinum*, *E. evectum*, *E. Wallisii*, *E. ibaguense*, and the delightful hybrids *E. O'Brienianum*, *E. Dellense*, *E. Bonndii* and *E. kewense*. Owing to their somewhat scandent habit they require some kind of support, and for this reason they make excellent subjects for covering walls and pillars to which wires or a wooden trellis are attached. Another method is to grow them in pots, using ordinary sticks to hold them in position, or several stems may be placed in a receptacle and the shoots trained round supports. When it is intended to cover a wall it is best to make a long box in which the stems are planted. They require good drainage and a mixture similar to that recommended for Cattleyas. Spray them frequently throughout the growing period. Aerial roots appear on the stem, and will soon attach themselves to the wall or trellis if it is kept moist. As the stem elongates young shoots are produced at intervals, and when they push out roots the shoots may be cut off and potted up to replace any examples that have exhausted themselves in flowering. These Epidendrums are not fastidious in regard to temperature, and they will thrive in almost any structure, perhaps excepting the cool division. If grown in a high temperature thrips will often appear, especially in the centre of the growth, but these can be held in check by the use of a reliable insecticide.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCCHILD), Buckinghamshire.

WALL TREES.—Peaches, Nectarines and Apricots should be examined to see whether all the branches and young growths are secure in their proper places. Where any have been displaced by winds or other causes let them be nailed, or otherwise made secure, in a neat manner, so that the fruit may be fully exposed to sun and air. Pears, where they have set thickly, may yet be thinned, and those remaining will reach a larger size. Grapes should also be thinned, and the lateral growths kept to one joint. Fig trees will now have the fruit at full size and at the point of ripening. All strong shoots should be laid close to the wall, using the pruning knife as little as possible. The advantage of allowing plenty of space between each shoot will now be seen, for on account of the natural size of the leaves they shade the young shoots to a very large extent, and if the latter are in the least degree overcrowded it is impossible to secure properly ripened wood by the end of the season. Remove no shoots, except those which grow foreright; such as are in a proper position should be carefully trained in, for it is from these shoots that the fruit is to be expected next year. Allow no growths to cross each other, for if trained in to that degree it will become necessary to prune them away at a later date.

BUDGING.—The budding of most kinds of fruit trees may yet be done, bearing in mind that much depends upon the condition of both stocks and buds, which nothing but experience can determine. Stocks that were budded early in July should be carefully examined, and the ligaments loosened where necessary, otherwise, as the buds swell the flow of sap will be checked and the parts above the buds swell irregularly.

STRAWBERRIES.—Young plantations of Strawberries may now be made. The runners that were layered early in July will be ready for removal from the parent bed, and may be planted in their permanent quarters within a week or

ten days after their severance from the plants. Planting should take place as early as possible, the young plants having a far better chance of making satisfactory growth and becoming established in their new quarters before the advent of winter. Where the layering of the young runners in pots has been impracticable the layers should be lifted from the bed retaining as much soil as possible about the roots, and planted direct into the prepared beds, and afterwards watered.

RASPBERRIES.—Remove all last year's canes of such Raspberries as have ripened their fruit. To allow the old canes to remain longer than is necessary is to deprive the young canes of a very considerable amount of nourishment.

GENERAL REMARKS.—Continue to protect all ripening fruits from birds by applying suitable coverings to the trees, whether growing against walls or in bush form. Wasps have given no trouble in this neighbourhood. It will, however, be wise at this time to make a diligent search for nests in the immediate neighbourhood of gardens and orchards.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

HYBRID CALCEOLARIAS.—Such Calceolarias as *C. Veitchii*, *C. Bronze Age*, *C. Golden Glory* and *C. Cibiranii* are well worthy of cultivation. One of the advantages of this section is that they will keep in good condition for a long time and attain a very large size. These qualities, with their habit of blooming through the greater part of the spring and summer months, are well worth consideration. Seed may be sown now in the same manner as previously recommended for the herbaceous kinds. The earliest of last year's seedlings will have passed out of flower, and those which are still in bloom must not be allowed to suffer for want of water. Although they are not so much troubled with aphides as the softer-leaved herbaceous Calceolarias, they must be kept clean or the appearance of the plants is soon spoiled.

SALVIA.—Late-struck plants should now be moved into the final pots. The blue *Salvia Pitcheri* is one of the smallest growers and does not require so much pot-room as the others. *Salvia* generally branch sufficiently with one or two stoppings, but where they are not furnished with enough shoots, it will be necessary to again pinch the points of the strongest shoots. If the pots can be plunged in ashes it will be better for the plants and the soil will not become so dry. Feed the roots liberally and syringe the plants, as recommended in the calendar for issue of June 5 last.

EUPHORIA JACQUINIAEFLOREA.—The size that this fine winter-blooming stove plant will attain depends very much on its treatment during the next six or eight weeks. Although a comparatively spare rooted plant it requires a wonderful amount of manual assistance to bring out its best qualities, much more than is usually given. With a brisk stove heat and a liberal use of weak stimulants to commence with, increasing the strength as the plants increase in size, the plants will grow apace. They must be exposed to the light by keeping the tops close to the glass in the house where they are grown, lowering the pots gradually as the heads extend. In these conditions the plants will attain a robust character and be capable of profiting by liberal feeding.

CINERARIA.—Plants that were raised from seeds sown early should now be ready for moving into larger pots. In the case of Cinerarias intended for flowering in winter it is a matter of the first importance that the plants should gain size and strength before the short days. Pot the plants in a rich compost, using rotted manure and leaf-mould with plenty of sand. Ordinary garden frames sufficiently roomy to admit of the plants standing clear of each other are the best places in which to grow them during summer. Provide shade from hot sunshine; admit plenty of air during day, and on warm

nights let the lights be drawn completely off to expose the plants to the night dews. A little seed may still be sown for a later batch.

GENERAL WORK.—*Achimenes*, Tuberous Begonias, *Gloxinias*, *Richardia africana*, and many other plants will now be passing out of flower. They should be kept in a house or pit where they will have plenty of light with little or no shade, and watered regularly so as to keep the soil fairly moist until the leaves or tops turn yellow and die off naturally. The cause of many failures in the spring may be traced to neglect of the plants after flowering.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

MUSHROOMS.—Make preparation for a supply of autumn Mushrooms. If horsedroppings are available they should be collected daily and placed in a dry, open shed, and turned frequently until a sufficient quantity has been obtained. When all danger of sourness is past remove the material to the house in which the bed is to be made up, and after a few days ram it tightly together and insert the spawn when the temperature of the bed is at 80°. The spawn should be placed within 1 inch of the surface of the bed, which must be made firm after the surface has been covered with fine new loam to the depth of 1 inch. A covering of straw may then be placed over the bed to prevent evaporation. Within six weeks of the time of spawning the young Mushrooms should begin to show through the surface, when a careful examination of the bed should take place, and, if necessary, a gentle application of rain water given through a fine rose. Frequent waterings should be rendered unnecessary by syringing the walls and floor, thus keeping the house cool and moist.

CUCUMBERS.—Sow Cucumber seeds singly in small pots for producing a supply in November and December. Place the pots in a warm pit which is free from red spider and other insect pests. As soon as the young plants have made one rough leaf pot them into 5-inch pots, and keep them growing without a check until they are ready for planting out. Cucumber plants now yielding fruits should be stopped and thinned. To prevent overcrowding remove overgrown leaves and make room for young fruitful shoots. Topdress the bed lightly with loam and decayed manure as often as the young roots appear through the surface. Apply a light dusting of soot previous to watering the bed. Syringe the plants frequently and maintain a night temperature of 75°.

LETTUCE.—As regards an autumn supply of Lettuce no date can be fixed for sowing, as so much depends on the weather, but it is safe to make sowings at weekly intervals through the month of August, and transplant the seedlings on warm borders or in spare frames, leaving a crop also in the spots where the seeds were sown. Prince of Wales Cos, All the Year Round, and Monument are good varieties for sowing now, and Hardy White Cos, Maximum and Stanstead Park for later use. Lettuces require rich soil and plenty of space between the plants.

GLOBE ARTICHOKE.—As soon as the crop is over the stems should be cut down and the ground between the plants lightly pricked over with a digging fork.

ENDIVE.—A sowing of Batavian Endive may still be made for raising winter supplies. Choose a sheltered situation, sow thinly, and prick out the seedlings as soon as they can be handled.

CABBAGE.—Another sowing of Cabbage seed may be made at once on ground which is not too rich. From this sowing the most valuable plantation may be obtained, as the plants will stand the winter better if not extra large, and are less likely to run to seed than those from the earliest sowing.

MINT.—In order to secure a supply of green Mint in October a number of plants should be cut over quite close to the ground at once, and a supply of clean, young shoots will be the result.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

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

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

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 62.8.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, August 5 (10 a.m.): Bar. 29.5. Temp. 67°. Weather—Showery.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—

Two collections of established Orchids, by Protheroe & Morris, at 67 and 68, Cheapside, E.C., at one o'clock.

Powdery Scab of Potatos.

Under the title, "A Contribution to the Life History of *Spongospora subterranea*," Mr. L. O. Kunkel gives in the *Journal of Agricultural Research** an interesting and valuable account of the mode by which Potato tubers are infected by *Spongospora*.

As is generally known, the organism which causes the powdery scab diseases has a life history very similar to that of *Plasmodiophora brassicae*, the parasite which induces club root of the Turnip and other members of the brassica tribe. Briefly that life history consists in the following phases: A spore is produced which, after a period, bursts, and releases a minute, naked piece of protoplasm which constitutes the amoeba stage. The amoebae give rise either by coalescence one with another or by growth of a single amoeba to a plasmodium. In this stage the organism consists of a naked mass of protoplasm with many nuclei and endowed with the power of that peculiar creeping movement known as amoeboid, and effected by the pushing out of an arm-like branch and a flowing of the remainder of the plasmodium with that arm. Later there arises from the plasmodium a group of

spores which, on germination, repeat the life cycle.

It has been assumed generally that infection of the Potato by the *Spongospora*, and that of the Turnip by *Plasmodiophora*, is effected by the parasite in its amoeboid stage. This, however, is shown by Mr. Kunkel to be inaccurate so far as *Spongospora* is concerned. He has observed, and the observation is of considerable practical importance, that the earliest visible sign of infection consists in minute spots (1-100th of an inch in size) on the young tubers. These spots have the form of circular blisters, and are light-brownish in colour: each spot is surrounded by a circular, translucent area of from 1-25th to 1-12th of an inch in area. Hence the infection spot—as it may be termed—is visible to the naked eye.

Microscopic examination reveals the fact that beneath each of these spots occurs a plasmodium of *Spongospora subterranea*, and it also provides evidence in favour of the view that infection is brought about by the entrance through the skin of the Potato, not of an amoeba, but of the plasmodium. In its course the plasmodium destroys the superficial cells across which it passes. It then throws out branches (pseudopodia) which penetrate between and into lower groups of cells. Having gained access to a cell, the pseudopodium, which is only a branch of the plasmodium, separates itself from the mass of the plasmodium and enters into close relation with the protoplasm of the Potato cell. That cell is not destroyed, but is stimulated to excessive growth. Thus the infected cell becomes a giant cell, and when it divides the protoplasm of parasite, as well as that of the host, passes into such daughter cell.

Later on groups of spore-balls are produced. These spore-balls may germinate during the time that the Potato is in store; the amoebae are thus liberated in the tissues of the tuber, and, attacking the mature cells, destroy them and set up a dry rot. When diseased Potatos are planted the spores germinate, and if they do not find suitable conditions, they surround themselves with a wall and pass again into a resting, encysted state, to emerge once again and continue their destructive career when the conditions are favourable.

The chief practical use of this investigation would appear to be the discovery of the very early "spot" stage of infection. The scientific value of the investigation is considerable, for this would appear to be the first discovery of infection by a plasmodium.

BELGIAN NURSERYMEN'S EXPORTS TO AMERICA.—Last month the President and Secretary of the *Chambre Syndicale des Horticulteurs*, Belges, which since the war has had its headquarters at Rotterdam, with a branch at Sas Van Gent, memorialised the Worshipful Company of Gardeners to the effect that the restrictions imposed by the British Government in reference to exports to the United States of America through Holland were operating strongly against the interests of Belgian horticulturists. The *Chambre Syndicale* pointed out that if these restrictions were made to apply to the autumn exports

it would mean the ruin of some Belgian nurseries. They therefore begged the intervention of the company with the British Government. The company accordingly applied to the Board of Trade, and after the matter had been fully considered and due weight had been given to the representations of the clerk of the company, a letter was sent to the company by the Board of Trade stating that His Majesty's Government would offer no objection to the shipment of plants of Belgian origin to the United States of America through Holland, provided that payment for the goods had been made into a bank in the United Kingdom, and an undertaking submitted to the Board of Trade by such bank that the money will not be allowed to be withdrawn while the enemy's occupation of Belgium continues, except under licence given on behalf of His Majesty's Government. The Board of Trade further stated that it would be necessary that a permit for shipment be obtained from one of the British Consuls in Holland after the production to him of documentary evidence that the plants are, in fact, of Belgian origin.

WAR ITEMS.—Messrs. KELWAY AND SON, Langport, inform us that thirty-three members of their staff have joined His Majesty's Forces since the outbreak of war. Of these two are sergeants, three are corporals, two are lance-corporals, twenty-five are privates and one is a stoker. This total is about 23 per cent. of the staff of men, women, boys and girls employed by Messrs. KELWAY.

—Private T. CONSTABLE, 2nd Black Watch, formerly a gardener at Mountquhanie, Cupar-Fife, has been killed in action. He was first reported missing, but news of his death has now been officially announced.

—Mrs. BENSON, Buckhurst, Withyham, Sussex, sister of Sir GEORGE HOLFORD, has opened her gardens to the public twice a week, the proceeds derived therefrom to go to the War Horticultural Relief Fund.

—Private WILLIAM G. DICKSON, 5th Royal Scots, is reported wounded and missing at the Dardanelles. Before the war he was employed at the Royal Botanic Gardens, Edinburgh.

—Private GILBERT MEIKLE, 1-5th Battalion of the Royal Scots Fusiliers, was killed at the Dardanelles on July 1. Before enlisting he was one of the staff in the gardens at Pinmore House, Ballantrae, the residence of his commanding officer, Colonel POLLOCK MCCALL. He was twenty-two years of age.

GLASGOW PUBLIC PARKS.—The accounts of the Glasgow Parks Department for the year ending May 31 last have now been issued. The expenditure for the year was £110,245, and the income £108,754. The rate imposed was 3.68d. The assets amount to £1,283,804, and the liabilities are £1,047,117.

EDINBURGH PUBLIC PARKS.—In accordance with an endeavour which is being made to reduce expenditure by the Edinburgh Corporation, considerable reductions have been made in the estimated outlay on the public parks. At a recent meeting of the Town Council, when these estimates were submitted, along with those from other departments, a member of the Council proposed a further reduction of £1,500. The convener, Mr. INMAN, stated that the estimates had been reduced by £1,892, and could not be further lowered. No bulbs for next spring were to be purchased. The estimates of this Committee were then approved of by 35 to 6. It was stated that the income from golfers and bowlers had fallen off by £1,200.

DR. A. F. DE WALDHEIM.—The Director of the Imperial Botanic Garden at Petrograd, Dr. ALEXANDER FISCHER DE WALDHEIM, completed

his fiftieth year of scientific activity on June 30, and the occasion was celebrated by the presentation of addresses of congratulation to the veteran botanist. Among the telegrams of felicitation was one from our own Royal Horticultural Society.

PRESENTATION TO MR. FRANK READER.—On Tuesday last many of the principal exhibitors at the R.H.S. shows presented to Mr. FRANK READER a silver salver and a purse of gold in token of their appreciation of his unflinching courtesy, and to mark his quarter century of service with the society. There were 84 subscribers. Mr. HAROLD BEALE (of Messrs. CARTER AND CO.) made the presentation. He referred to Mr. READER's never-failing geniality and helpfulness to all the exhibitors. Mr. W. CUTHBERTSON said that, speaking as president of the Horticultural Trades' Association, he was sure that the feelings expressed by Mr. BEALE were shared by all the members. He proposed a vote of thanks to Mr. F. HERBERT CHAPMAN, who had acted as hon. secretary of the presentation committee. Mr. READER, in thanking the donors, said that he felt, whatever he had been able to do to make the way smooth for exhibitors, Mr. S. T. WRIGHT had done very much more, for no society could be represented by a more painstaking superintendent.

APPOINTMENT.—Mr. WILLIAM BROADHURST BRIERLEY, M.Sc., of the University of Manchester, has been appointed by the President of the Board of Agriculture and Fisheries a first-class assistant in the Plant Pathology Laboratory of the Royal Botanic Gardens, Kew.

VISIT TO THE KINVER TRIAL GROUNDS.—On the 28th ult. the foremen of the various parks of the city of Birmingham, accompanied by the chief officer, Mr. WILLIAM H. MORTER, journeyed by motor-bus to the trial grounds of Messrs. EDWARD WEBB AND SONS, LTD., Stourbridge. After a tour of the grounds the party adjourned for luncheon provided by Messrs. WEBB, and later a visit was paid to the famous Kinver Edge, from which a magnificent view of the surrounding country is obtained. Favoured with delightful weather the outing proved very enjoyable.

ACCIDENT TO A NURSERYMAN.—Mr. DAVID HUNTER, of Messrs. BARR AND HUNTER, nurserymen and seedsmen, Maxwelltown, Dumfries, met with an accident recently, when a motor-car dashed into Mr. HUNTER's cycle. Mr. HUNTER was dragged along the road for some distance, and it is feared that two of the smaller bones of the right leg were broken.

POISONED BAIT FOR HOUSE FLIES.—Mr. C. W. MALLY, writing in the South African *Journal of Science*, describes the good results obtained by the use of sodium arsenite as a destroyer of house flies. The "bait" is prepared by mixing 1 lb. of sodium arsenite with 10 lbs. of sugar and dissolving the mixture in 10 gallons of water. The solution may be syringed over manure and rubbish heaps. Leafy twigs dipped in the solution and hung up in places where flies congregate serve as death-traps.

GERMINATION OF SEEDS.—An interesting experiment in the germination of Teak seeds is described in the *Indian Forester* for May. It was found that charred seeds collected from a burnt Teak forest germinated within fourteen days of sowing.

THE FLORA OF KWANGTUNG.—Mr. W. J. TUTCHER has published a supplement to DUNN and TUTCHER's *Flora of Kwangtung* in his report on the Botanical and Forestry Department, Hong-Kong, 1915. It includes forty-six additional species, five of which are described as new, all belonging to common genera. *Sassafras tzumu* was among the discoveries. The enumeration is preceded by some interesting notes on the country and vegetation.

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

ECHINUM PEREZII, tab. 8617.—This species was introduced into cultivation by Dr. G. V. PEREZ, of Teneriffe. *E. Perezii* is very close to *E. Wildpretii*, which formed the subject of the coloured plate in *Gard. Chron.*, October 26, 1912, but the leaves are decurrent to the base and the flowers pale pink, a lighter shade than

panicke; the sepals and petals are yellow striped with orange-red; the tip is wholly orange-red.

MECONOPSIS PRATTII, tab. 8619.—This is the plant referred to as *M. rudis* by Mr. FARRER in *Gard. Chron.*, November 14, 1914, p. 318, and February 27, 1915, p. 110. The species was originally included with *M. sinuata* and later with *M. rudis*, from which it differs in its more herbaceous foliage, shorter flowering pedicels, white stamens and pale-green stigma. The



FIG. 23.—POLYSTACHYA PANICULATA. COLOUR OF FLOWERS: REDDISH-ORANGE. (See "Botanical Magazine.")

those of *E. Wildpretii*, which are pale red. The new species is said to make a good greenhouse plant. It grows wild in the island of Palma, one of the Canaries.

POLYSTACHYA PANICULATA, tab. 8618 (see fig. 23).—This West African Orchid was illustrated in *Gard. Chron.*, Vol. XLVIII., p. 462. When first discovered, Swartz placed it with the *Dendrobiums*, but it was transferred to its true genus in 1897. The flowers are borne in a dense

flowers are bright blue, sometimes with a flush of purple or pale purple throughout. The species is bardy in this country.

RHODODENDRON CONCINNUM, tab. 8620.—Several dwarf *Rhododendrons* have been introduced from China in recent years and accorded specific rank; but now Mr. HUTCHINSON lumps *R. concinnum*, *R. yanthinum*, *R. Benthamianum* and *R. coimbense* under the one species—*R. concinnum*—for the morphological differences

are very minute, although as forms they will probably be treated as culturally distinct. The flowers, as shown in the illustration (which is an exceedingly effective plate), are carmine, with ferruginous lines on the paler undersides.

GARDENING IMPLEMENTS.—The *Board of Trade Journal* makes the following announcement:—"The office of H.M. Trade Commissioner for South Africa reports that an agent desires to secure the agencies for South Africa of United Kingdom manufacturers of leather, sewing machines and garden implements. Communications in this connection should be addressed to H.M. Trade Commissioner for South Africa, P.O. Box 1,346, Cape Town."

THE NATIONAL BOTANIC GARDENS, KIRSTENBOSCH.—The Report on the National Botanic Garden of South Africa shows that the honorary Director, Professor H. H. W. PEARSON, is carrying on the work of creating a great botanic garden with energy and success. The planning and laying out of the garden must and should take many years of labour and study, and we are glad to observe that it is not proposed to treat this great museum of living plants merely from the point of view of landscape effects. The motto for a botanic garden must always be "the plant's the thing," and although it is by no means necessary to sacrifice fine landscape effects, such effects must be the outcome of the best and most natural grouping of the plants.

KOLKOWITZIA AMABILIS.—This native of Western China is the only representative of a genus which is related to *Diervilla* and *Abelia*, and although it reached the Arnold Arboretum (U.S.A.) in 1908 it has flowered recently for the first time. The flowers are borne in pairs on long stems at the ends of short, lateral, leafy branchlets an inch long with a two-lobed oblique corolla deep rose colour in the bud, becoming paler after opening, the inner surface of the three divisions of the lower lobe being white blotched with orange colour at the base. *Kolkowitzia* is an erect-growing shrub with slender stems and branches and is apparently perfectly hardy. The Arboretum specimen is now nearly 6 feet high.

COTTON CULTIVATION SEVENTY YEARS AGO.—It will require some investigation and a careful examination of any facts that may have been observed to determine whether there is really truth in the suggestion that the difficulty of cultivating American Cotton in India is due to the deteriorating influence of the indigenous varieties of Cotton. Some species being indigenous in America and others in India, nothing would appear simpler than to cultivate the former species in the latter country or the Indian species in America. Experiments on this subject have for many years and at different times been made, both by the East India Company and individuals, but with the single exception of what is called Bourbon Cotton in the Timnivelly district, no permanent success has attended them. Without referring to any recent results that may have been obtained, it is an important question to ascertain the cause or causes of this failure. In looking over the chapters on the cultivation of Cotton, pp. 78 and 312, in ROYLE'S *Essay on the Productive Resources of India*, we find that numerous experiments have been made on the subject; that the attention of the Directors of the East India Company was called to it as early as 1788; that seeds, with a machine for cleaning Cotton, have been sent to India; and that a Cotton farm was even established in the last century. So, again, in 1810, 1813 and 1818; and in 1840 Captain BAYLIS, who had returned from America with 10 experienced planters, was sent with them to India to cultivate American and Indian Cotton in the American method in different parts of that extensive empire. In addition to this, we find the Agricultural Society of India and numerous indi-

viduals making experiments with the same object in view. Success has certainly not been in proportion to the efforts made. This cannot be because American Cotton will not grow in India, for the complaints in some places are that it grows too much. We cannot believe that all the experiments have been unskillfully performed in a country where Indigo, Poppy, Sugar Cane, Mulberry and Rice are successfully cultivated. We suspect, therefore, that the causes of failure in producing an article suited to the European market must be of a very general nature to have been productive of so many similar results. And as these results may depend upon many different parts of the culture being carefully attended to—that is, the growth, the gathering of the crop, the cleaning the Cotton, the proper housing, and the careful packing—it is a question whether the people pay equal attention to every part of the culture, although each is of equal importance. It is probable also that in so wide a sphere of experiment, and where there are considerably differences of climate, the same causes may not be those which are the most influential in all the different situations; for instance, the soil may be too rich in one and too poor in another situation; the winds too violent, or the cold too great; the moisture excessive, or the dryness intolerable. *Extract from the Gardeners' Chronicle, August 2, 1845.*

SOIL PROTOZOA AND SOIL BACTERIA.—At the meeting of the Royal Society recently Dr. E. J. RUSSELL made the following communication:—"In view of the claim recently made by GOODEY that soil protozoa cannot function as a factor limiting the numbers of bacteria in soils, the author has brought together the evidence on which this view is based. It has been shown in numerous experiments that the numbers of bacteria in normal soils are relatively low, but they can be raised by any treatment that kills trophic forms and not spores. Starting, in the first instance, to find the properties of the factor which keeps down the bacterial numbers, and without framing any hypothesis as to its nature, these were found to be:—(a) active, and not a lack of some essential; (b) not bacterial; (c) extinguished by heat or poisons, and after extinction does not reappear; (d) can be reintroduced by adding a little untreated soil; (e) is favoured by conditions favourable to trophic life in the soil. These properties indicate that the factor is biological. Search was therefore made for organisms fulfilling these conditions and numbers of protozoa were found. Definite evidence has been obtained that trophic forms occur as normal inhabitants of the soil, and the estimates of numbers so far available show that they are considerable. There is the closest possible relationship between the extinction of the protozoa and the extinction of the limiting factor, and also between the re-establishment of the protozoan fauna and the setting up of the limiting factor after reinfection with small quantities of soil. Hitherto the reinfection with mass cultures of selected protozoa has not had the effect of reducing bacterial numbers, but this is attributed in part to the difficulty of obtaining a suitable control, and in part to the fact that the fauna developing in culture infusions (from which the organisms were selected) differs from the trophic fauna, the forms predominating in the one not necessarily figuring largely in the other. Until more is known of the life-history of the protozoa of the soil, it is unsafe to attach too great importance to failure of reinfection experiments made with mass cultures of forms prominent in hay-infusion cultures from the soil."

ENSILAGE.—In many cases hay aftermath might be converted into silage. When the aftermath is grassy a top-dressing of $\frac{3}{4}$ cwt. sulphate of ammonia or other quick acting nitrogenous manure would be useful. It is not too late to sow crops for silage purposes in July and August. A mixture such as Vetches, Oats, and a little Rape would make good silage and prove

an effective "smother" crop if sown early in July on land where roots may have failed because of drought. If the stubbles are broken up as soon as the corn is in stock and sown with White Mustard or Rape, useful crops for filling the silo may be expected. The main essential in making silage is compression, to exclude air, and this object is usually best attained when the silage crops are cut while still in the immature condition and carted soon afterwards. Silage is now generally made in stave silos or in stacks. The stave silo, which is widely used in the United States, has been successfully tried in some parts of England. It entails less waste than the stack, and needs no artificial weighting; the fodder is chaffed before being stored, and the greater depth of the silo, as compared with its diameter, ensures sufficient compression. On the other hand, a stack saves the initial cost of a silo, and may be erected in any convenient position. Full particulars on the making of silage will be found in Leaflet No. 9, and on catch crops in Special Leaflet No. 28. Copies of either may be obtained free of charge and post free on application to the Secretary, Board of Agriculture and Fisheries.

PUBLICATIONS RECEIVED.—*The Handy Book on Pruning, Grafting and Budding.* By James Udale. Third edition. (Evesham: W. & H. Smith, Ltd.) Price 1s. 6d.—*How Belgium is Fed.* By William C. Edgar. (The National Committee for Relief in Belgium, Trafalgar Buildings, Trafalgar Square, London.)—*Fungoid Diseases of Farm and Garden Crops.* By Thomas Milburn and E. A. Bessey. (London: Longmans, Green & Co.) Price 2s.—*The History of Kew Gardens.* By G. S. Boulger. (Richmond: Hiscock & Son.) Price 1d.

CANADA.

SUMMER EXHIBITION OF THE ROSE SOCIETY OF ONTARIO.

THE third summer exhibition of Roses was held by the Rose Society of Ontario on Friday, June 25, at the Margaret Eaton Hall, Toronto. It may be said that in every way the show was a marked improvement upon those of the two preceding years of the society's life, and a very satisfactory feature was the presence in larger numbers of exhibitors of the amateur class, whose encouragement is one of the main objects of the society. There were in all 75 exhibits and 30 exhibitors, of whom 20 were in the Amateur Class.

The early part of June was cool with an abundance of rain, and as the showery days alternated with days of brilliant sunshine, the weather was unusually favourable to the Roses, causing an exceptional brilliance in colour, with great vigour and stoutness of habit and a far better texture in the flower than can usually be obtained here.

The names and classes of exhibitors were as follows:—

PROFESSIONAL CLASSES.

MR. J. T. MOORE, Moore Park; MR. LAWRENCE, Mr. THOMAS MANTON, and MR. MUSTON, of the Toronto Horticultural Company.

MR. J. T. MOORE is the owner of large Rose plantations in North Toronto. His Roses are under the practical care of his able superintendent, Mr. James Bryson, and his exhibit of Hybrid Perpetuals and Hybrid Teas was especially fine. Among many hundreds of others, the later favourites, such as Juliet, Betty, Bessy Brown, the Lyon Rose, Mrs. Wallace Rowe, General-Superior A. Janssen, Miss Alice Rothschild and Lady Alice Stanley found their place upon his benches. Mr. J. T. MOORE was sole exhibitor in the Novelty Class. This always popular exhibit included beautiful buds of the Old Gold, Willowmere, Mrs. Ambrose Ricardo, Florence Forrester, Mrs. F. W. Vanderbilt, Mrs. Charles Pearson, Mrs. James Lynas, Colleen and Madame Edouard Herriot.

Mr. THOMAS MANTON, who is one of Toronto's oldest established and most expert decorators, has always, at all shows, added to the cultivator's skill the talent of the artist, and his representation (by means of single Roses and foliage fastened to the wall) of a climbing and fully-blooming Rose was a great attraction.

Mr. LAWRENCE showed a fine exhibit of that magnificent crimson H. T. Hadley, for whose popularity he is responsible in Toronto.

Mr. MUSTON showed a very dainty arrangement of Roses in vases, in a space permitted for such an exhibition.

The semi-professional exhibitors were Sir EDMUND OSLER, M.P., and Mr. ALEXANDER McPHERSON, superintendent of Alexandra Park Gardens.

The semi-amateurs were Mrs. A. PATTERSON and the President (Mrs. ALLEN BAINES), and Mr. L. MCCARTHY.

The amateurs were Mrs. W. H. B. AIKENS, Dr. BODDINGTON, Mrs. BARR, Mrs. STAYNER, Mr. REGINALD NORTHCOTE, Mrs. HERBERT MASON, Mrs. RUDDY (Brantford, Ontario), Mrs. WATT (Brantford, Ontario), Mrs. E. P. SMITH, Mr. McMICHAEL, Mr. RAYMOND, Dr. TEMPLE, Mrs. CHARLES TEMPLE, Dr. ROLPH, Miss RIDOUT, Miss ARMOUR (hon. secretary), Mrs. WARD, and Mrs. GEORGE WILSON.

It would be impossible to give detailed lists of all the exhibits. The collections of Mrs. RUDDY and Mrs. WATT, of Brantford, included Sunburst, Lady Alice Stanley, Florence Pemberton, Evelyn Dautesey, Mrs. Theo. Roosevelt, Dean Hole and Mabel Drew, and everywhere there were signs of a desire to make and to keep acquaintance with the newcomers among the Hybrid Teas. For the rest, it may be said that they formed a collection of very fine, well-chosen and well-cared for Hybrid Perpetuals, Hybrid Teas, Teas and Bourbons, and among them old friends' faces such as La France, Caroline Testout and Souvenir de Malmaison lost nothing by comparison with the newer shades and newer kinds of H.T. Roses. The general effect was very brilliant.

The Rose Society of Ontario tries with respect and affection to follow in the footsteps of the National Rose Society of the homeland. Therefore its stands are of the same pattern and its method of exhibition is in tubes let into the stands and surrounded by leaf moss. These long lines of dazzling colour were thrown into relief against the table decorations at the end of the hall, while beyond these again, upon a raised platform, were the beautifully decorated tea tables, with the Red Cross as their sign and symbol, which were organised and arranged by Mrs. Reginald Northcote, assisted by a very willing band of young workers. For amid these days of dreadful war, in which our dear land is battling for freedom and for honour, the Rose Society did not forget its part. How would this be possible, seeing that its very purpose is to spread throughout the length and breadth of Canada the love of England's emblematic flower whose attractions of exquisite form and colour and perfume find deepest response in every British heart?

Therefore, it was agreed that all the proceeds of the tea-table and half the door money should be given to the Canadian Red Cross Fund, while in the evening the Roses were most successfully auctioned off by Mr. Bryon in aid of a fund to provide comforts for the Canadian Grenadiers.

The exhibition was opened at half-past two by Sir Edmund Osler, M.P., and both in the afternoon and evening there was a crowded attendance. The growing enthusiasm of the amateurs found practical expression in the generous gift of two extra armoire prizes for next year's schedule by Mr. McMichael, himself an amateur, whose exhibit, especially of magnificent blooms of the variety Captain Hayward, proved his skill.

GLADIOLUS KUBANGENSIS.

GLADIOLUS KUBANGENSIS (fig. 29) is a curious, grassy-leaved species, a native of Tropical Africa, the plant illustrated having been sent to Kew Gardens from Angola. It grows about 18 inches high, and the flowering stems produce one or two flowers on each. These flowers are spotted with reddish-brown. In comparison with so many other fine Gladioli, *G. kubangensis* does not promise to be a specially good garden plant, though it may prove valuable to the hybridist. W. F.

FOREIGN CORRESPONDENCE.

CHEIRANTHUS ALLIONII.

In the *Gardeners' Chronicle* for July 17 Mr. Walker asks: "Can any reader throw light on the origin of *Cheiranthus Allionii*?"



FIG. 29.—GLADIOLUS KUBANGENSIS. FLOWERS SPOTTED WITH REDDISH-BROWN.

According to a paper by M. D. Bois, in *Revue Horticole*, 1913, p. 445, *Cheiranthus Allionii* is said to be the same plant as *Cheiranthus Marshallii*, Hort., as already suggested. This being admitted, *Cheiranthus Allionii*, Hort., must be considered merely as a synonym or a *nomen nudum*.

But this *Cheiranthus Marshallii*, Hort., must not be confounded with *Cheiranthus Marshallii*, Stark, = *Erysimum Marshallianum*, Andr., the Primrose-flowered plant alluded to in Mr. Walker's note, a plant which the *Index Kewensis* refers to *Cheiranthus ochroleucum*, which is identical with *Erysimum ochroleucum*, D.C., of Western Europe (Alps, Pyrenees, Portugal, etc.), a hardy perennial that bears large, pale yellow and sweet-scented flowers.

Now, *Cheiranthus Marshallii* (versus, *C. Allionii*) is not a wild species but a garden hybrid raised in England in the middle of the last century, by John Marshall, of Limbourn, by crossing *Erysimum ochroleucum*, D.C., with the pollen of *Erysimum Perofskianum*, Fisch. and Mey., an annual from Afghanistan, long known in gardens. It bears orange-coloured flowers 1½ foot high.

The cross had been made in view of rendering *Erysimum ochroleucum* more fertile, it being naturally a shy seeder. Two plants were raised, one with pale yellow flowers that has been described in *Floricultural Cabinet*, 1850, p. 265, the other with orange-coloured flowers. This latter has alone survived in cultivation, it being fairly fertile. But who is responsible for the duplicate name *Cheiranthus Allionii*, under which it has been spread in gardens as if it were a new plant?

Erysimum Marshallianum—for it really belongs to that genus—is a fine plant, about 1 foot high, bushy and of neat habit, throwing masses of flowers of very rich orange colour, having a strong scent of violet. The early spring-sown seeds will flower in autumn and the summer seedlings will bloom next spring, at about the end of May. It is best treated as an annual, although some plants may last longer. The seeds are listed in some French catalogues as "*Erysimum nain compact jaune safran*."

From *Erysimum Marshallianum* another hybrid has been raised lately by Mons. Cayeux in crossing it with *Cheiranthus mutabilis*, L'Herit., the curious Madeira Wallflower, whose flowers pass from yellowish to violet and then to purple. This hybrid has been named and described by M. D. Bois (l.c.) as *Cheiranthesium Cayeuxii*. It is worthy of notice that among the plants raised from that cross some plants have gone back to *E. ochroleucum* and others to *E. Perofskianum*, thus showing the hybrid nature of *E. Marshallianum*.

There is another *Erysimum* as valuable as *E. Marshallianum* for spring bedding. This is *E. murale*, Desf., an annual growing wild in some parts of France, with small, bright yellow flowers. It is known in the French trade as "*Erysimum nain compact jaune d'or*," and is often used in beds instead of Wallflowers, its habit being more compact and its flowers more numerous and longer lasting. The seeds should be sown at mid-summer. S. Mottet, Paris.

PLANT NOTES.

NEW CHINESE PRIMULAS.

ACCORDING to a note in *Le Jardin* (July 5, 1915) the following six new Chinese Primulas have been described recently by Mgr. H. Lévillé (*Le Monde des Plantes*, Jan.-March, 1915):—

Primula virginis, Lévillé: on rocks and pastures, 3,300 to 4,000 metres; plants glabrous, 8 inches high, leaves entire or denticulate, slender inflorescence bearing 2 to 4 deep blue flowers.

P. perolaeifolia, Lévillé: on woody hills, 600 to 1,000 metres, 7 inches high, leaves glabrous, orbicular, flowers blue or violet.

P. racemosa, Lévillé: on rocks, 600 metres, 16 inches high, leaves like those of *P. officinalis*, flowers in groups, corolla with long tube, violet-mauve.

P. Mairei, Lévillé: in pastures, 3,300 metres, elegant plant from 4 to 6 inches high, leaves cut, pinnatifid, sparsely downy on both surfaces, flowers deep blue or violet.

P. Blinii, Lévillé: 3,400 metres, a small, delicate species, 4 inches high, leaves deeply toothed and downy, flowers in umbels of 3 to 5 flowers, rose.

P. Ragotiana, Lévillé: in moist woods, 3,000 metres, very small, 2 inches high, leaves sinuately incised, flowers violet.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XXXIX).

LES FRAISES EN ANGLETERRE.

A LEUR tour les fraises, maîtresses du marché pendant plusieurs semaines, deviennent rares et les quelques envois réaliseront bientôt des prix de primeurs. L'activité des commissionnaires et des fabricants de confitures qui a été absorbée par ce fruit, peut se tourner maintenant vers l'écoulement ou la transformation d'autres produits.

La Fraise ne peut être populaire que lors de la cueillette dans les cultures de plein air, celles de serre constituant des produits de luxe qui ne sont accessibles qu'à des privilégiés. Elle commence en Angleterre vers les premiers jours de juin pour prendre fin avec le mois de juillet.

Les cultures anglaises sont extrêmement importantes. Il y aurait, suivant des statistiques officielles, plus de huit mille hectares consacrés à la production commerciale. L'observation faite au sujet des besoins de la population en fruits, est certainement de rigueur pour ce qui concerne la Fraise, fruit de table très recherché et en même temps produit idéal pour la fabrication de confitures dont l'Anglais fait un usage énorme.

Dans les grands centres de production, la Fraise est souvent cultivée comme entre-culture dans les plantations fruitières. Cela se voit notamment dans le Kent, le Worcestershire et le Cambridgeshire, bien qu'on y trouve aussi des cultivateurs qui estiment la culture suffisamment rémunératrice pour ne pas la subordonner à une autre. C'est souvent le cas pour les petits exploitants, et dans le Hampshire qui, grâce à sa situation près de la Manche, fournit les premières Fraises de la saison, on estime qu'une famille peut vivre confortablement sur une exploitation de un hectare et demi de fraisières.

L'expérience acquise en ce qui concerne la nature du sol à recommander est la même qu'au Continent. Bien que les exigences soient quelque peu variables suivant les variétés, la terre limoneuse est préférée, mais nous avons vu aux environs de Cambridge de bonnes plantations en terrain franchement sablonneux, et il paraît même que dans le Hampshire d'excellents résultats sont obtenus dans des bruyères qu'on croyait de valeur nulle au point de vue agricole.

Dans les régions à hiver assez rude du Continent, les producteurs bien avisés plantent en juillet-août, de façon à obtenir des plants suffisamment forts pour donner une bonne récolte l'année suivante. En Angleterre la plantation s'effectue au début de l'automne seulement (peut-être parce que l'hiver est moins à craindre) ou immédiatement après l'hiver. Elle se fait en lignes à 60 ou 70 centimètres et 30 centimètres dans les lignes. Les variétés préférées varient selon les régions; dans le Cambridgeshire, les obtentions de Laxton Bros., de Bedford, sont très répandues; dans le Kent, on rencontre beaucoup de Sir Joseph Paxton, dans le Hampshire, des Royal Sovereign. La qualité de cette dernière est très appréciée, et cette année encore des plaintes se sont élevées parce que certains producteurs y avaient mélangé des fruits d'autres variétés. Sans doute que sa popularité dans le Hampshire est aussi partiellement due à la nécessité pour cette région d'évacuer le marché quand la masse des Fraises des autres centres arrive.

La localisation des cultures entraîne tous les ans des difficultés pour le transport de la récolte. Le Hampshire et le Kent vendent leur production à Londres. Le 16 juin de cette année il serait parti de Swanwick Station près de 100,000 paniers contenant deux ou quatre livres de Fraises; cela représente déjà quelques

wagons. La cueillette nécessite l'appoint de centaines de familles de l'East End de Londres qui, ainsi que cela se passe dans le Kent, peuvent séjourner des mois dans la région pour aider à d'autres travaux, tels que la récolte des houblons.

Le Kent commence des envois réguliers vers la mi-juin. Il y a quelques années on devait organiser tous les soirs deux ou trois trains spéciaux pour le transport des Fraises à Londres. Ce trafic s'est restreint, et d'aucuns l'attribuent à une diminution de production due à l'épuisement des cultures. Il est certain cependant que l'emploi de plus en plus régulier des camions automobiles doit nuire au transport par voie ferrée. Pendant la saison on voit régulièrement le matin, à Covent Garden, des pancartes annonçant l'arrivée, par automobile, d'autant de centaines de colis de Fraises cueillies le jour même (morning gathered) et une foule d'agents, de colporteurs et de curieux, assés aux arrivages qui s'écoulent souvent en quelques minutes. Ces produits l'emportent évidemment en qualité sur ceux qui ont été expédiés la veille. On peut dire qu'au marché toutes les échoppes sont encombrées de Fraises; le consommateur ne demande rien d'autre pendant plusieurs semaines et les producteurs bien avisés ont soin de régler leurs cultures de façon à ne pas offrir trop d'autres fruits au moment où la Fraise a envahi le carreau.

La récolte du Cambridgeshire et du Worcestershire prend en grande partie le chemin de l'Angleterre Centrale et Septentrionale où les bassins industriels très peuplés offrent un débouché énorme. Là aussi la cueillette et le transport exigent des mesures spéciales.

NOUVELLES DIVERSES.

EXPORTATION DE PLANTES BELGES VERS L'AMÉRIQUE.—Il résulte d'une communication de M. Ebbelwhite, secrétaire de la Worshipful Company of Gardeners, la société anglaise qui fit en 1913 une excursion dans les régions horticoles belges (Bruxelles, Malines, Gand, Bruges, Tournai, etc.), que l'exportation de plantes belges vers l'Amérique sera autorisée dorénavant. Pour éviter toute erreur, les envois devront être couverts par des certificats d'origine délivrés à l'un des consulats d'Angleterre en Hollande, par où le transit se fera. La délivrance de ces certificats sera facilitée si les intéressés produisent des déclarations du bourgmestre de la localité dans laquelle les plantes sont cultivées. Le gouvernement anglais exige de plus, qu'avant l'exportation, la valeur des produits soit déposée dans une banque anglaise, ceci en vue d'éviter l'envoi de fonds vers un pays ennemi. La Chambre Syndicale des Horticulteurs de Gand qui avait demandé à la Worshipful Company d'appuyer sa requête auprès du Board of Trade a vivement remercié cette association de son intervention efficace.

AIDE AUX HORTICULTEURS DES PAYS ALLIÉS.—A la suite de l'appel de la Royal Horticultural Society, l'association horticole de Haywards Heath and mid-Sussex a décidé que les recettes de son exposition annuelle seront versées entre les mains du trésorier du Fonds Horticole. En vue d'augmenter le bénéfice net il n'y aura pas de prix en argent dans les différentes classes.

RAISIN BELGE À LONDRES.—Un exportateur avait préparé, en Hollande, un envoi de Raisin belge destiné à l'Amérique. Le transport devait se faire par la Holland-America Line. Mais en vertu des dispositions prises par les autorités

anglaises pour arrêter l'exportation allemande, on requit certains certificats qui ne purent être produits en temps. L'envoi fut alors dirigé sur l'Angleterre où les certificats ne sont pas requis, étant donné qu'il s'agit de produits ayant une valeur alimentaire. L'état de ces Raisins était très satisfaisant lors de leur arrivée.

ÉTAT DES CULTURES HORTICOLES EN HOLLANDE.—Un communiqué de la Direction de l'Agriculture donne un aperçu de la situation dans les centres horticoles, au 17 juillet, d'après les rapports des professeurs d'horticulture de l'Etat. Pour ce qui concerne les fruits, certains centres envoient de très bonnes prévisions tandis que d'autres annoncent une mauvaise récolte, mais d'une façon générale, si l'on excepte les Prunes, la situation paraît satisfaisante. Dans les centres maraîchers du sud du pays, les légumes ont souffert de la sécheresse tandis que dans le Nord des dégâts ont été occasionnés par les gelées tardives. La maladie des choux règne dans les plantations de la province de Hollande Septentrionale; comme conséquence les rendements seront réduits. Dans les cultures sous verre de Concombres, les attaques de l'araignée rouge ont été intenses (sans doute à cause de la sécheresse prolongée) et celles de Tomates souffrent de Cladosporium.

OÏDIUM AMÉRICAIN DU GROSEILLIER.—Comme suite à nos communications antérieures relatives aux résultats peu satisfaisants donnés par les essais de fongicides contre l'oidium Américain, il est intéressant de signaler une lettre publiée par De Tuinbouw et dans laquelle le correspondant prétend combattre efficacement le cryptogame à l'aide d'applications de carbolineum. Une première aspersion, à 6 pour cent, est faite en janvier, une seconde, à moins de 5 pour cent, le plus tard possible, soit fin janvier ou commencement mars. Dans les cas bénins, la première application, portée à 8 pour cent, peut suffire. L'enlèvement des drageons est à recommander, mais le raccourcissement annuel des jeunes pousses devient superflu. Ce serait là un beau résultat. Rappelons en ce qui concerne les concentrations, que divers carbolineums sont mis en vente et que leur composition est variable.

KORT OVERZICHT VOOR DE VLAMINGEN.

ONDER de vruchten die fel in eer zijn in Engeland treft men de aardbezie aan. De teelt geschiedt in de fruitplantages of in afzonderlijke velden.

De groote "trek" heeft plaats van begin Juni tot einde Juli. Hampshire in 't Zuiden begint eerst met Royal Sovereign, later komen Kent, Cambridgeshire en Worcestershire met Noble, Laxton, Sir Joseph Paxton, enz. Uit ééne statie heeft men tot 100,000 korfjes per dag naar Londen gezonden. Uit Kent brengt men de beziën dikwijls met motorwagen en die worden dan beter verkocht omdat ze den dag zelf geplukt werden.

In den tijd der aardbeziën wordt al ander fruit door de koopers verwaarloosd.

Onder groenten werd uit Maastricht margarine in België gesmokkeld. Een Hollander denkt den Amerikaanschen Kruisbiersen-meeldauw bij middel van carbolineum doelmatig te kunnen bestrijden.

Belgische druiven werden verleden week in Londen ontvangen. De uitvoer van belgische planten naar Amerika wordt thans toegelaten op voorwaarde dat zekere pleegvormen vervuld worden.

THE FLOWERS OF MILTON.

(Continued from p. 69.)

FENNELL.

More pleased my sense
Than smell of sweetest Fenel.
P. L. IX. 580.

FIG.

The Fig-tree, not that kind for Fruit renowned,
But such as is this day to Indians known.
P. L. IX. 1101.

The Indian Fig-tree or Banyan (*Ficus indica*).

FIR.

1. Cedar, and Pine, and Firr, and branching Palm.
P. L. IV. 139.
2. Hollowed bodies made of Oak or Firr.
P. L. VI. 574.
3. The Gummie bark of Firr or Pine.
P. L. X. 1076.

Fir and Pine were the general names for all high-growing Conifers, except Cedar and Cypress.

GOURD.

Each plant and juciest Gourd will pick.
P. L. V. 327.

In Milton's time a synonym for Cucumbers.

GRAPE.

1. Cool recess, o'er which the mantling Vine
Lays forth her purple Grape, and gently creeps
Luxuriant.
P. L. IV. 258.
2. Berrie or Grape.
P. L. V. 508.
3. For drink
The Grape she crushes.
P. L. V. 344.
4. Nor envy them the Grape
Whose heads that turbulent liquor fills with shame.
Samson Agonistes, 551.
5. Bacchus that first from out the purple Grape
Crusht the sweet poison of miss-used Wine.
Comus, 46.

See also Vine.

HAWTHORN.

Every Shepherd tells his tale
Under the Hawthorn in the dale.
L'Allegro, 68.

See also Whitethorn.

HAZEL.

The Willows and the Hazle cospes green.
Lycidas, 42.

HONEYSUCKLE.

With Ivy canopied, and interwove
With flaunting Honey-Suckle.
Comus, 545.

See Eglantine and Woodbine.

HAEMONY.

He call'd it Haemony.
Comus, 628.

See Anemone.

HYACINTH.

1. Creous and Hyacinth with rich inlay
Broidered the ground.
P. L. IV. 701.
2. Violets and Asphodel
And Hyacinth.
P. L. IX. 1041.
3. That Sanguine flower inscrib'd with woe.
Lycidas, 106.

IRIS.

Each beauteous flour,
Ir's all hues.
P. L. IV. 698.

This is the first instance of the word Iris used as the English name of the plant. The older name was Flower-de-luce or Fleur-de-lis. So says Turner (1562): "Iris is known both of the Grecianes and Latines by that name; it is called in Englishe flour de lyce."

IVY.

1. Direct the clasping Ivie where to climb.
P. L. IX. 217.
2. Ye Myrtles brown, with Ivy never sear.
Lycidas, 2.
3. With Ivy berries wreath'd.
Comus, 55.
4. A bank with Ivy canopied.
Comus, 544.
5. Ivy-crowned Bacchus.
L'Allegro, 16.

JESSAMINE.

1. Roses and Gessamin
Rear'd high their flourisht heads.
P. L. IV. 698.
2. The tufted Crow-toe and pale Gessamine.
Lycidas, 143.

JUNIPER.

There he slept
Under a Juniper.
P. R. II. 272.

KNOT-GRASS.

The chewing-flocks
Had ta'en their snpper on the savoury Herb
Of Knot-grass dew-besprent.
Comus, 539.

A British creeping plant (*Polygonum aviculare*) called by Evelyn "the very worst of garden-weeds"; but is said by Aubrey (*Nat. Hist. of Wiltshire*) to be the pasture grass (*Agrostis stolonifera*).

LAUREL.

1. Of thickest covert was inwoven shade
Laurel and Myrtle.
P. L. IV. 694.
 2. A monument, and plant it round with shade
Of Laurel ever green.
Samson Agonistes, 1785.
- The laurel of Milton was the Bay.

LILY.

1. By Sandy Ladons Lillied banks.
Arcades, 97.
 2. In twisted braids of Lillies.
Comus, 861.
- Lily with Milton cannot be tied down to any fixed species.

MOLY.

That Moly
That Hermes once to wise Ulysses gave.
Comus, 636.

Copied from Homer. The plant meant is unknown. Theophrastus describes a plant called Moly with a root like an Onion, and from that Linneus named a species *Allium Moly*.

MUSK ROSE.

1. The Musk Rose and the well-attir'd Woodbine.
Lycidas, 141.
2. And Sweetn'd every Musk Rose of the dale.
Comus, 496.

The Musk Rose was taken by Milton and writers of his day as the chief Rose for beauty and sweetness.

MYRTLE.

1. The fringed Bank with Myrtle Crowned.
P. L. IV. 262.
2. Of thickest Covert was inwoven shade,
Laurel and Myrtle.
P. L. IV. 694.
3. And waving wide her Myrtle wand.
Od. Not. 15.
4. Them she upstais
Gently with Myrtle band.
P. L.
5. Beyond a row of Myrtles.
P. L. IX. 627.
6. Ye myrtles brown with ivy never sear.
Lycidas, 2.

Milton had probably seen many Myrtles in his foreign travel, but he could not have taken much notice of them, or he would not have made Eve use Myrtle twigs to tie up her plants, or describe Myrtle as brown and covered with Ivy. *H. N. Elnacombe.*

(To be continued.)

HOME CORRESPONDENCE.

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

CHELIDONIUM FRANKENIANUM.—About ten years ago a poppy-wort came to me under this name, from I know not where. My edition of the *New Hand-List* is an old one—1893—and does not mention it. I do so here and now, because it is the only one of the *Celandine* genus, so far as known to me, worthy of cultivation, and it wins approval from all who see it. Its chief beauty is in the leaves, which are all radical and spread in a rosette close to the ground. They are from 8 to 10 inches long, with ten trifid lobes and a terminal, vivid grass green with darker veins, and irregular blotches of a glaucous hue, closely set on the back with white hairs. The flowers are solitary, clear yellow, carried on long peduncles well above the foliage, resembling, but somewhat smaller than those of *Meconopsis cambrica*. Although it ripens seed freely, it has not the aggressive pertinacity of the Welsh poppy, and may be safely grown among choice plants. The peculiarity of this *Celandine* is its faculty of retaining moisture on the upper surface of the leaves. To-day, July 26, is one of the most scorching days we have had this summer; yet now, at 3 p.m., after the Indian species of *Meconopsis* have parted with all trace of moisture, the pretty rosettes of *Celandine* are still spangled with glittering beads. *Herbert Maxwell, Monreith.*

GOODYERA REPENS.—This native species is an Orchis very seldom found in gardens. It would be interesting to know in what gardens it is cultivated, and where it has been known to blossom. At the present time a small plant in the Wilderness garden at Fribury has thrown up two flower spikes, one of which is fully developed and the other only now starting. The spike in bloom bears 22 flowers. It is four years since a tiny bit of the plant was planted, and it has spread underground quite eighteen inches from the original spot. *W. W.*

FLOWERS IN THE PARKS.—Your leading article under this title in last week's issue will have been widely approved in the conclusion reached, viz., that never more than at the present moment do we require to keep our parks or gardens gay with flowers as an antidote to the carnage in which our minds are steeped. Nevertheless there was something in the plea for economy, which was the point raised by writers to the newspapers. We want all our flowers, and we also want for other purposes both such young gardeners as remain and the money they receive in wages. How are we both to have our cake and eat it? Rightly considered, surely here is an opportunity for the patriotic volunteer disqualified by age or other disability from joining the forces and who is at the same time unfitted for the munitions bench. There must be countless skilled amateur gardeners available, both men and women, who would gladly give unremunerated service in carrying on, thus freeing such gardeners as remain to join their comrades at the front. Perhaps, too, some of our Belgian guests would be able to lend a hand—giving us the advantage of their experience in a field in which they are pre-eminent. Though having no accurate conception of the numbers employed in our public gardens, parks, etc., throughout the land, it must be considerable enough to justify a combined effort along some such lines as those here indicated. Perhaps readers of the *Gardeners' Chronicle* would bear the matter in mind when filling up their registration forms next week? *P. W. Oliver.*

LIME SPRAYING AND INSECT PESTS. Entoments have been made to the effect that the spraying of Apple and Plum trees with lime alone has had a very good effect in reducing attacks of the aphid and the Apple sucker. Particularly it has been reported that this highly satisfactory result has been secured where the lime spraying was done just before the blossom buds opened. If any reader has experienced such a happy result it would be highly interesting to see his account thereof in these columns.

My own experience in lime-spraying last season was entirely unfortunate, because rain followed quickly after every day's operations, and in about a week nearly all the lime was washed off the trees, although from 1 cwt. to 1½ cwt. of lime to 100 gallons of water had been applied. What is wanted is some material to make the lime stick on the trees. Both waterglass and salt, which have been used with lime, must help rain to wash the deposit off the trees. I have thought of trying a small proportion of Portland cement, but fear that it would set in the spraying machines, and block them, as the cement sets under water. Another material worth trying is resin. Builder's size would probably be too expensive. There is a fine opening for ex-

12 feet in height and 13 feet in diameter. The tree has this season set many hundreds of fruits and these have a striking appearance. Those interested in flowering trees and shrubs should not fail to obtain this beautiful plant. *Edwin Beckett, Aldenham House Gardens.*

— A plant of *Xanthoceras sorbifolia* growing in stiff soil and in a somewhat shaded position in these gardens has flowered several times since it was planted eight years ago. This year, however, it blossomed much more freely. All shrubs have flowered more profusely than usual, and this applies to plants in the hedges such as *Rosa canina*, *Guelder Roses*, *Dogwood*, *Euonymus* and *Hawthorns*. *E. M., Swanmore Park Estate, South Hants.*



FIG. 30.—XANTHOCERAS SORBIFOLIA IN ALDENHAM HOUSE GARDENS, ELSTREE.

periments in this connection. *A Southern Grower.*

XANTHOCERAS SORBIFOLIA.—Like most other flowering trees and shrubs, *Xanthoceras sorbifolia* has flowered profusely this season, and it is interesting to note the experience of two such keen horticulturists as Sir Herbert Maxwell and Mr. H. J. Elwes (see *Gardeners' Chronicle*, Vol. LVII., pp. 332, 348). Here at Aldenham, on a cold, stiff, retentive clay the plant thrives and seldom fails to flower abundantly. I am enclosing a photograph (see fig. 30) recently taken of a plant which was placed in its present position about twelve years since. It is upwards of

THE SEASON.—A season that made one apprehensive of a general failure of garden and field crops has been redeemed by the abundant rains. Strawberries were in general wilted by the intense drought previous to the rain, and these did not recover, but all other fruits, flowers and vegetables have responded in the most wonderful way to the change. It is in such a season as this, when everything was drooping for the needed liquid, and which, owing to the circumstances of the year, could not be supplied, that one has almost to rearrange ideas regarding the advantages of artificial watering. Not only has nothing but the one crop suffered, but every crop seems all the better for the experience, no doubt

owing to the heated condition of the soil previous to rain falling. I expected a return of red spider on some Codlin Apple trees which have been infested for the last two summers by that pest. Means for spraying the trees had been provided in early spring, but it had to be left undone, and these are absolutely free from infestation. Had the trees been sprayed the results would have been attributed to the operation. There need be no fear now of the future of this and other hardy fruits. Though the "christening of the Apples" was performed previous to St. Swithin's, it has been no less effective, and the experiences of this year will certainly prove once again how much of truth is embodied in old saws. The season is going to prove, too, that the colouring of Apples is effected, if not always, at an early stage of growth, and signs, evident on the fruit itself, as also on ripening Peaches on walls, are abundant that colour will not be lacking. But it is unsafe to generalise from one particular. While the unrelieved drought of the present year was, to a large extent, harmless, we know from the experience of past years that a drought just a little later in the season, if not mitigated by irrigation, proves very harmful. The appearance of gardens and fields gives rise only to feelings of delight and thankfulness, and it may be hoped that the waste of fruit and other produce of last autumn may not be repeated this. Notwithstanding the advice supplied by newspapers, and by circulars, it is seen to be impossible to change economic conditions all at once. At the same time gardeners and owners of gardens might well be extra careful in these times of all kinds of fruit and vegetables. Last autumn I saved all the ripened, or nearly ripened, French Beans, Broad Beans and Peas, all of them splendid food and delicious when properly prepared for food. We have no special means of preparation and preservation. Only an ordinary preserving pan, with glass and earthenware jars, and some hay or straw to keep the latter steady while the necessary heating proceeds. The housekeeper uses olive oil to keep out air, and the jars are covered with skin. In my own house ordinary gummed paper alone is used, and is placed over the jars two-thick before the contents have cooled. As a people we seem to have forgotten that meat is not essential to health and strength. But, in order to live exclusively on cereals, fruits and vegetables, the cook must be qualified to a degree very much in advance of the average. *B.*

THE DATE OF THE PHYSICK GARDEN AT OXFORD.—Attention has again been drawn to the authorities for the year of the establishment of our oldest botanic garden by Mr. A. W. Hill, of the Royal Gardens, Kew, in an admirable paper on the "History and Functions of Botanic Gardens," which comes, like many other good things at the present time, from over the Atlantic in the *Annals of the Missouri Botanical Garden*. It is a most interesting though short review of botanic gardens, from those of Theophrastus, Thothmes, and Wu Ti to that of Missouri. *En passant* Mr. Hill dwells on the early days of our Oxford garden, and once more adverts to the variety of dates, from 1621 to 1632, which have been given for its foundation. There has been a strange fatality about it, and even Messrs. Druce and Vines, who have been the last to attack the problem with some care, have not gone as accurately into the matter as they might have done, considering that all the materials lie ready to the hands of Oxford workers. In their introduction to the *Morisonian Herbarium* (1914), they say

"It is a singular fact that the true date of the foundation of the Oxford Garden has not been given in any of the very numerous books which refer, directly or indirectly, to its history. . . . It is perhaps even more singular that Anthony Wood, who tells the story of the foundation of the Garden in his *History and Antiquities of the University of Oxford* (ed. Gutch, 1796, vol. ii, Part 2, p. 896) should also have made a mistake in the date, which he gives as 1622; this may possibly have been a misprint for 1632, or it may be the result of faulty computation of July in the nineteenth year of the reign of King James I., which was not 1622, but 1621."

With regard to the first of these remarks I may say that I had already settled that 1621 was the true date of the first establishment of the garden, in a book, *History of the Daubeny*

Laboratory, published in 1904, and the same view was put forward in *Oxford Gardens* in 1912. But on their title-page Messrs. Druce and Vines have printed an entirely new and unexplained date, 1619, with a suggestion that the early history of the garden began then. As well might they have given the date of the Garden of Eden. The five acres for the Oxford garden were not acquired before March 27, 1621! The method of their criticism of Wood is very unjust, because although he did occasionally make mistakes (who doesn't?), yet he had been dead and buried for very many years before the book quoted was printed. Moreover, the explanation of his mistakes is not correct. We suspect that the learned commentators may have adopted the method of some school-boys, who do sums on the principle of answers first and working-out afterwards. Anyhow, their account has led an American journal to print a note which gives an altogether undue importance to a miscopying of Anthony Wood. The reader of the introduction to the *Morisonian Herbarium* is left with the impression that Messrs. Druce and Vines have discovered the true date of the foundation of the garden, whereas Wood was wholly responsible for a wrong one. To settle the matter I have recently re-examined several of Wood's manuscripts in the Bodleian Library, and think that I have now found out how the mistake arose. In the first place the true date (1621) has always been known or knowable to the Keeper of the University archives and to searchers in his department. Those who have been misled were those who trusted to popular and unofficial writings. In the oldest Wood manuscript on the *History and Antiquities of the University* the historical passage quoted by Druce and Vines does not occur, but in its place the following:—

"To these lectures might be added one more wch (if rights might take place) should be settled, viz., the Botanical Lecture in the physick garden, but it being not yet, nor perhaps ever will be settled, nothing can be said thereof. However, as for ye foundation of the physick garden, I shall reserve wt. I have to say of it till I publish my book of the Antiquities of the Towne or City of Oxford." (Wood, F. 38, f. 60).

So I naturally turned to his MS. about the city of Oxford (not printed until nearly two centuries after his death), and there read the following statement of the date that Messrs. Druce and Vines discovered as the date of the foundation of the garden:—

"At length Henry, Lord Danvers, Baron of Duntsey in ye county of Wilts and Earl of Danby, giving to ye University ye sum of 250 li in money to purchase a piece of ground for a nursery of physick simples for ye University, bought ye said meed containing about five acres of ground of ye present tenant thereof, and presently after of ye College itself A.D. 1621, to be held of them by lease." (MSS. Wood, F. 29 a, fol. 84.)

Thus Wood, in his earliest manuscript, gave the date of the establishment of the garden perfectly correctly, and it was only by a slip in copying that 1621 became 1622 in the later manuscript and printed versions. It certainly was not, as Messrs. Druce and Vines suggest, by a mistake for 1632. It is only fair to our great Oxford chronicler to print his original and correct statement, as well as the erroneous copies of it upon which so much stress has been laid, and we are surprised that Messrs. Druce and Vines did not do so, since it must have been known to them. After the founding of the garden in the spring or early summer of 1621 there was a grand opening ceremony and the laying of a stone on July 25 of the same year. Wood placed this function in the following year. In judging him let us remember that he was not born until ten years after the event, and that the wide diffusion of erroneous dates has been due to later writers not having taken the trouble to go to the original records for their information. R. T. Gunther, *Magdalen College, Oxford*.

APHIS PEST OF APPLES.—Noting the experiences of *Southern Graver* and Mr. Theobald as they were explained in the leading article on p. 52 prompts me to inquire if these authorities are cognisant of the fact that the smoke of "smudge" fires is a readily applied and efficient insecticide? Especially potent is it in the case of the curling of the leaves stage when the fumes of the smudge fire can penetrate as readily the interior surface of the curl as the outside; furthermore, its advantage in autumn

over the uncertainty and danger of the forcible spraying application, as pointed out by Mr. Theobald, would be considerable. Another advantage—a very material one, peculiarly—would be the small amount of labour involved. Smudge fires have been extensively adopted by fruit growers in Worcestershire and Herefordshire as a protection of the fruit blossom from frosts, but whether as an insecticide I do not know. It may be asked if I have personally employed smudge fires against aphids. The answer is in the negative, excepting in a very small degree many years ago, when applying three or four of the "fires" to a small plot of bush and other forms of Apple trees, as they were expanding their blossoms and accompanying leaves, to protect them from frost. I happened to note subsequently that other neighbouring fruit trees not subjected to the fumes of the smudge fires were more or less infested by green fly. Circumstances at the time prevented my repeating the experiment. Recently, however, a gardener in Sussex informed me that some few years ago, when one of the assistants in a large garden establishment in Norfolk, smudge fires were adopted—instead of other remedies—also that the addition of cast-off Potato or other bags saturated with carbolic or other oils, etc., thrown over the fires, rendered the fumes additionally efficacious. My informant has for several consecutive years adopted the smudge remedy against fruit tree and Rose aphides, even in all seasons of the year. *Pomologist*.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 4.—Coming so close after Bank Holiday, the show at Vincent Square was naturally smaller than usual. The chief floral feature was a most interesting exhibit of Cape Pelargoniums from the Hon. VICARY GIBBS. Gladioli and herbaceous Phloxes were shown in considerable numbers, and there was a collection of cut Roses of exceptional merit considering the stormy weather.

The Orchid Committee recommended 1 First Class Certificate, 2 Awards of Merit, and 3 Medals for novelties and groups.

The Floral Committee recommended 1 Award of Merit and 11 Medals.

Floral Committee.

Present: Mr. H. B. May (in the chair), and Messrs. Chas. T. Druery, John Green, F. W. Harvey, G. Reuthe, Geo. Harrow, J. W. Moorman, Wm. Howe, J. F. McLeod, Thos. Stevenson, John Jennings, C. Dixon, John Dickson, H. J. Jones, Arthur Turner, Chas. E. Shea, W. Cuthbertson, Chas. E. Pearson, W. P. Thomson, J. T. Bennett-Poë, W. G. Baker, George Paul, C. R. Fielder, E. H. Jenkins, and W. J. Bean.

AWARD OF MERIT.

CAMPANULA ABUNDANCE.—A dwarf compact blue-flowered hybrid, much after the style of *C. Norman Grove*, but with larger foliage. Shown by Mr. GROVE.

CARDS OF CULTURAL COMMENDATION.

TECOMA GRANDIFLORA, shown by the DUCHESS OF ALBANY, Claremont.

MYRTUS LUMA, shown by Mr. REG. CORY, Duffryn, South Wales.

GENERAL EXHIBITS.

The following Awards were made to collections:—*Silver-gilt Flora Medal* to the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), for an interesting group of some 140 distinct sorts of Cape Pelargoniums. Besides such fairly well-known varieties as Lady Plymouth and tomentosum, there were several possessing glaucous foliage which would be valuable for summer planting in the grey border; the chief are *artemisaefolia*, *Schottii* Blandfordiana and *echinatum*. *Silver-gilt Banksian Medals* to Mr. H. J. JONES, Lewisham, for a collection of herbaceous Phlox, which showed no damage from the recent heavy rains; and to Messrs. KELWAY BROS., Langport, for a magnificent collection of Gladioli. *Silver Flora Medals* to Mr. J. C. ALLGROVE, Langley, Bucks, for a display of

such Roses as *Rayon d'Or*, *Madame E. Herriot*, *La Tosca* and *Avoca*, with an adjoining exhibit of *Thalictrum dipterocarpum*. Messrs. JAMES BOX, LTD., Lindfield, for a monster collection of herbaceous Phlox of all the most desirable varieties; and to Mr. JAMES DOUGLAS, Bookham, for Border Carnations, of which the yellow-ground fancies were particularly noteworthy. *Silver Banksian Medal* to Messrs. H. B. MAY AND SONS, Upper Edmonton, for greenhouse Ferns, with *Lapageria rosea* and *L. alba*. *Bronze Banksian Medals* to Messrs. W. CUTBUSH AND SON, Highgate, for Ivy-leaved *Pelargonium Radiance* in standard and dwarf plants. Messrs. STUART LOW AND CO., Enfield, for *Streptocarpus*, *Gloxinias*, *Nerines*, and other greenhouse plants. Mr. G. REUTHE, Keston, for miscellaneous hardy and half-hardy plants; and to Mr. W. WELLS, JUN., Merstham, for herbaceous Phlox.

Orchid Committee.

Present: Mr. J. Gurney Fowler (in the chair), and Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, R. Brooman White, Pantia Ralli, R. G. Thwaites, J. Charlesworth, A. Dye, S. W. Flory and F. Sander.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Sibyl var. *Scintillant* (*Dowiana aurea* × *iridescens*), from J. GURNEY FOWLER, Esq., Brackenhurst, Tunbridge Wells. A charming hybrid, in which the parents of *C. iridescens* (*Eldorado* × *bicolor*) show strongly, the former imparting its grateful odour, and the latter the effective form of the lip. The sepals and petals are light-rose, with a gold tint; the base and isthmus of the lip deep orange with red lines, and the broad front lobe rich ruby-red.

AWARD OF MERIT.

Laelio-Cattleya Thyone, *Fowler's variety* (*L.-C. Ophir* × *C. Dawiana aurea*), from J. GURNEY FOWLER, Esq. One of the most beautiful of the yellow-petalled hybrids. Sepals and petals cow-lip-yellow, lip deep claret colour, with fine gold lines from the base. It was raised by Francis Wellesley, Esq.

Cattleya Harold Fowler's variety (*Gaskelliana alba* × *Warszewiczii* *Frau Melanie Beyrodt*), from J. GURNEY FOWLER, Esq. The flowers are intermediate between the two parents; they are white with a violet blotch in the middle of the lip, which has a chrome yellow disc.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., showed a selection of rare Orchids, which included the beautiful *Cattleya Miss Louisa Fowler*, illustrated in the *Gardeners' Chronicle*, August 8, 1914, p. 115; *Cattleya Rex*, with a four-flowered inflorescence; *C. Warszewiczii saturata*, with a rich ruby-purple lip, in which the yellow blotches usual in the species are not developed; grand forms of *Laelio-Cattleya eximia* and *L.-C. Henry Greenwood*.

E. G. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. Stevenson), showed the Woburn Place variety of the beautiful cross between *L.-C. Geo. Woodhams* and *C. Lord Rothschild*, with fine flowers having rose-coloured sepals and petals and a rich ruby-purple lip with a few gold lines.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), showed two finely flowered *Cattleya Warszewiczii* *Frau Melanie Beyrodt* and *Brassia Lawrenceana longissima*.

Messrs. CHARLESWORTH AND CO., Hayward's Heath, were awarded a Silver Banksian Medal for a selection of finely grown *Odontoglossums*, in which two *O. ardentissimum* xanthotes were remarkable; *Odontodas*, including very dark forms of *O. Brewii*, *Lycaste Ballia* and *Cattleya Gaskelliana alba*.

Messrs. SANDER AND SONS, St. Albans, secured a Silver Banksian Medal for a varied group in which were many very interesting species, together with *Cneclogyne Mooreana* and other White *Coelogynes*: *Augulosa Cliftonii*, *A. uniflora* and its variety *eburnea* and various *Laelio-Cattleyas*, the central specimen of *L.-C. Wisetonensis* (*C. Warneri* × *L.-C. callistoglossa*), with nine large flowers on two spikes, being a grand example.

Messrs. STUART LOW AND CO., Jarvisbrook, obtained a Silver Banksian Medal for a group of varieties of *Cattleya Gaskelliana*, *Odontoglossums* and interesting Indian Orchids, among

which were noted a good specimen of *Rhyncostylis retusa* and a plant of *Aërides maculosum* Schroderi, first illustrated in the *Gardeners' Chronicle* as *Aërides Schroderi* (from Dr. Ainsworth's collection), April 17, 1880, the specimen illustrated being large and with five branched spikes. *Vanda coerulea* was also shown.

Messrs. FLORY AND BLACK, Slough, showed the new *Odontoglossum cerissimum* (Ceres $\times$ ardentissimum), with a fine spike of white flowers tinged with lilac and spotted red-brown. Also *Odontoglossum Meredithiae* and an *Odon-tioida* obtained between *Bradshawiae* and *Lambeanium*.

Fruit and Vegetable Committee.

Present: Mr. Alfred H. Pearson, in the chair, and Messrs. Jos. Cheal, G. Kelf, A. R. Allan, Owen Thomas, S. T. Wright, Edwin Beckett, J. Harrison, J. Jaques, E. A. Bunyard, G. Woodward, A. Bullock, P. D. Tuckett and H. H. Williams.

The Hon. VICARY GIBBS, Aldenham House, El-tree (gr. Mr. E. Beckett), sent a collection of Cherries. The fruits, which were of Waterloo, Late Duke, Knight's Early Black, Black Tartarin, Florence and Arch Duke, were all of full size and good appearance.

Scientific Committee.

JULY 20, 1915.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Dr. A. Voelcker, Sir J. T. D. Llewellyn, Messrs. J. W. Odell, R. Hooper Pearson, J. T. Bennett-Poe, J. Fraser, C. E. Shea, F. J. Chittenden (hon. secretary) and G. Forrest (visitor).

Galls on Poplars.—Mr. J. FRASER showed specimens of galls on the midribs and petioles of Black and Lombardy Poplars, and further specimens came from Mr. Fielder. They are due to the attack of the aphid known as *Pemphigus bursarius*.

Curious Growth of Potato Tubers.—Mr. R. HOOPER PEARSON showed Potato tubers received from a correspondent of the *Gardeners' Chronicle*. These had produced young tubers apparently inside the older ones, but in reality attached outside, and arising as usual from a branch from the shoot derived from an eye. The eye was rather deep-seated and the young tuber had apparently been wedged against the "eyebrow," and by its lateral expansion and owing to the pressure of other tubers above, had split the parent tuber, having probably entered it at a spot where there was some defect in the old tuber. Its further development had been within the cleft so formed. It should be understood that the old tuber had produced the new tubers in dry store.

Garden Mints.—A large number of specimens of Mint were brought by members of the committee from various districts, and one was sent by Mr. Fletcher, of Aldwick Manor, Bognor. They included several forms of *Mentha viridis*, some of which had a trace of peppermint scent and one or two of which were free from it, especially one brought by Mr. Shea from his garden; the hybrid *M. sativa*, *M. gracilis cardiaca*, *M. crispa* (*M. ovoidis* $\times$ *M. rotundifolia*), *M. rotundifolia* (called in some places "Apple Mint") and *M. alopecuroides*. The last two appear to be unsuitable for drying, and are perhaps not so full-flavoured as are the forms of *M. viridis*.

Berberis with Supplementary Leaflet.—Mr. R. HOOPER PEARSON sent foliage of *Berberis Aquifolium* with a supplementary small leaflet arising from the midrib of the leaf at about the middle, and on its upper side near the base of one of the ordinary leaflets as though it were a foliose stipule.

Campanula Hybrids.—Mr. GROVE showed seedlings of *Campanula* Norman Grove (*C. Tommasiniana* $\times$ *C. carpatia* White Star). Several seedlings had been raised, the result of self-fertilising the hybrid, and they showed reversion towards both parents. One was a distinct *carpatia* form with a tinge of colour on the outside of the corolla, and at the other extreme a narrow-tubed (but still campanulate), blue-flowered form, approaching *Tommasiniana* in some way, but distinct.

Dodder on Streptocarpus.—Mr. L. Dawes, of Charlton Lea Gardens, Headington, Oxford, sent leaves of a *Streptocarpus* on which a species of Dodder was flourishing. The parasite was not in flower, and was therefore not identifiable.

ROYAL LANCASHIRE AGRICULTURAL.

JULY 29, 31 AND AUGUST 2.—This society not only considered it desirable to hold its annual exhibition this year as usual, but to include also the popular horticultural section, and the full entry and enormous crowds that thronged the marquee at Witton Park, Blackburn, on the opening day, proved conclusively that the public warmly supported the efforts of the executive. The pavilion was reduced in size, but the curtailment was in the passages rather than the space allotted to the exhibits.

Mr. Peter Blair, as usual, was responsible for the arrangements, which did him much credit.

COMPETITIVE PLANTS.

There were only four classes in this section, but these were sufficient to bring forward a good display. The best group of miscellaneous plants arranged for effect was exhibited by Mr. JAMES CYPHER, Cheltenham. It is not necessary to describe this in detail, but a word must be said for the richly-coloured Crotons and the admirable spires of *Vanda* and *Odontoglossum*. Mr. W. A. HOLMES, Chesterfield, was 2nd, and Mr. R. SIMPSON, York, 3rd.

For twelve stove or greenhouse plants, not fewer than seven to be in bloom, Messrs. CYPHER exhibited *Ixora Williamsii*, *I. Pilgrimii*, *Statice intermedia*, *Clerodendron Balfourii*, *Erica ventricosa* and others. Mr. CYPHER again secured the leading position for twelve stove or greenhouse plants in pots not exceeding 10 inches, showing excellent specimens. The best group of tuberous Begonias in a space of not less than 100 square feet came from Messrs. BLACKMORE AND LANGDON, Bath. The group was of circular form with a Palm in the centre and three baskets to break the formal design. The quality of the flowers was well up to the firm's high standard. A variety named General Joffre was noteworthy for its beautiful form and intense scarlet colour.

CUT FLOWERS.

The competition for an exhibit on a table of 100 square feet, which might include plants, fruit, etc., was well won by Mr. W. F. GARNER, Hale, with a well-arranged display in which Roses, Carnations and Orchids were tastefully blended.

In the class for a dinner table (Orchids excluded), there were twelve entries, Mrs. J. NIXON, of Alderley Edge, proving the victor. Miss NEWSHAM, Ormskirk, was 2nd. For a similar table, in which flowers might be used at the discretion of the exhibitor, six competed. Mr. W. F. GARNER won the 1st prize for an arrangement in which *Oncidiums* and *Odontoglossums* were prominent.

In the class for Sweet Peas Miss NEWSHAM outclassed all her rivals. Collections of Sweet Peas were numerous, and were of high quality throughout. Messrs. W. BOND, of Formby, S. SALISBURY AND SON, Wallasey, and Mrs. S. S. RIGG, Bowdon, were placed as named for the eighteen vases; and Mr. E. R. JAMES, Banbury, 1st for twelve vases in the open classes; whilst Mr. W. BOND, Mr. L. COOKSON, Salop, Mr. V. BOOTH, Gatley, Capt. GARNETT ONME, Skipton (two), were 1st prize winners in the amateurs' classes.

Mr. C. H. TAUDEVIN, Willaston, Chester, had the leading stand in a class for a collection of cut tree Carnations. Messrs. YOUNG AND CO., Cheltenham, were 2nd.

Messrs. W. ARTINDALE AND SON, Sheffield, led for hardy perennials. For twelve Roses (amateurs) Mr. GERALD GARNETT, Wyreside, took the lead, and Mr. J. W. G. SMITH, Yorks, won the 1st prize for six blooms.

FRUIT.

For twelve dishes of fruit in not fewer than nine kinds, the Duke of NEWCASTLE, Clumber,

Workshop (gr. Mr. S. Barker), led out of five entries with a superb collection. His Black Hamburgh Grapes and Spencer Nectarines were excellent. Mr. J. EDMONDS, Arnold, Notts, and JOHN BRENNAND, Esq., Thirsk (gr. Mr. J. E. Hathway), followed.

In four classes of Grapes, two bunches in each class, Mr. S. BARKER won the 1st prize.

VEGETABLES

were well shown. Mr. E. R. JAMES, Banbury, led with fine displays for nine distinct kinds in the open class, and six kinds in the amateurs' class. Other 1st prize winners were the Hon. Lady BEAUMONT, Yorks (gr. Mr. W. Nicholls), Messrs. W. ROBINSON AND SON, Garstang, and Mesdames ETTA and LILY BATTERSBY, Blackburn.

NON-COMPETITIVE EXHIBITS.

Large Gold Medals were awarded to Messrs. ALEX. DICKSON AND SONS, Belfast, who arranged in their usual effective manner a choice display of Roses, and Mr. R. BOLTON, Carnforth, for his extensive collection of Sweet Peas.

Gold Medals were awarded to Messrs. ARTINDALE AND SON, Sheffield, for a collection of *Violas* and hardy flowers; KING'S ACRE NURSERY CO., Hereford, for a collection of orchard house trees; ALEX. DICKSON AND SONS for Sweet Peas; S. BROADHEAD AND SON, Huddersfield, collection of rock and Alpine plants; A. LEAVER, Esq., Briercliffe (gr. Mr. G. Mathews), Begonias; Messrs. GODFREY AND SON, Devon, Phloxes and Pelargoniums; Messrs. LITTLE AND BALLANTYNE, group of Conifers; and to the LANCASHIRE COUNTY COUNCIL, for a collection of fruits, vegetables and flowers, and for culinary and Sweet Peas in pots.

Silver Medals were awarded to Mr. TOM WORSLEY, Haslingdon, collection of vegetables; Messrs. WHITELEGGE AND PAGE, Chislehurst, for Newberries and Alpines; Messrs. BARWISE BROS., Burnley, for cut Roses; Messrs. W. AND H. BROWN, for hardy flowers; Mr. W. EDWARDS, Nottingham, for table decorations.

Messrs. DICKSON AND ROBINSON, Manchester, had their pavilion well furnished with herbaceous cut flowers.

HAYWARDS HEATH AND MID-SUSSEX HORTICULTURAL.

AUGUST 2.—The 27th annual exhibition of this Society took place in Victoria Park, on the above date, and all proceeds derived therefrom were for the benefit of the War Horticultural Relief Fund. At the close of the show the trade exhibits were sold, the amount thus obtained also going to this Fund. The exhibition was smaller than those of previous years, but in the cottagers' classes there was keen competition.

The only exhibitor in the class for eighteen vases of Sweet Peas was the Rt. Hon. Lord NORTH, Banbury, who was awarded the Challenge Trophy, to be held for one year; the blooms exhibited were of excellent quality. Lord NORTH was also successful in the class for a collection of vegetables in eight kinds.

In the class for a display of Perpetual Flowering Carnations, Mr. H. M. KNIGHT, Haywards Heath, was placed first, as he was also in the class for six pots of *Streptocarpus*.

W. A. STURDY, Esq., Lindfield, was placed first in two classes, namely, for a collection of Hardy Perennials, and for a table of fruit arranged with cut flowers and foliage.

NON-COMPETITIVE EXHIBITS.

Gold Medals were awarded to Messrs. ALLWOOD BROS., Haywards Heath, for Carnations; ELISHA HICKS, Twyford, whose Roses, especially the new single H.T. Princess Mary, were much admired; JAMES BOX, Lindfield, and GIBBS BOX, Burgess Hill, who both exhibited Phlox, Gladioli, and other herbaceous flowering plants.

Silver-gilt Medals were awarded to FRANK WOOLLARD, Brighton, for a stand of Roses, and to an exhibit staged by his Grace the Duke of HAMILTON AND BRANDON, Balcombe, who, in

addition to a fine table of fruit, interspersed with small vases of Orchids, staged a collection of vegetables and a stand of Begonias.

Col. STEPHENSON R. CLARKE, Borde Hill, was awarded a Certificate of Merit for a collection of hardy flowering shrubs.

IRISH ROSE AND FLORAL.

JULY 23.—A floral fête promoted by the Irish Rose and Floral Society in aid of the funds for wounded soldiers and sailors was opened by the Dowager Marchioness of Dufferin and Ava in the Ulster Hall, Belfast, on the 23rd ult. No prize money was offered, and new varieties of Roses were sold by auction.

Gold Medals for three blooms of any new seedling Rose not yet in commerce were awarded to Messrs. SAMUEL M'GREY AND SON, Portadown, for the variety *Crimson Emblem*, and Messrs. HUGH DICKSON, LTD., for their variety *H. D. M. Barton*.

Messrs. ALEX. DICKSON AND SONS, LTD., staged Roses and Sweet Peas, conspicuous amongst the Roses being *Margaret Dickson*, *Red-letter Day*, *Irish Fireflame* and *Sir Edward Carson*. Many varieties of Sweet Peas had been brought over from Marks Tey, and were exhibited in excellent condition.

Messrs. HUGH DICKSON, LTD., Royal Nurseries, Belmont, staged Roses of excellent quality, those of outstanding merit being the varieties *Brilliant*, *Prince Charming*, *Golden Spray*, and *Mrs. Bertram J. Walker*.

Conspicuous in the exhibit of Messrs. FRANK E. SMITH AND CO., High Street, Belfast, was a floral design representing the flags of the seven Allies.

The amateur classes were well contested, Mr. J. H. WELCH, Londonderry, being particularly successful in the classes for Roses, and Messrs. E. COWDY, Loughgall, and T. SCOTT, Armagh, shared the honours in the Sweet Pea classes.

GARDENING APPOINTMENTS.

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

Mr. H. S. Foster, for the past 14 years Gardener to F. E. MUNTEZ, Esq., at Umberslade Hall, Hockley Heath, Warwickshire, has resigned that position, and has taken up war work in the Birmingham Small Arms Factory. His present address is School Road, Hockley Heath. [Thanks for Is. for R.G.O.F.—Eds.]

Mr. Wm. Mackay, for the past 34 years in the Flower Gardens and Plant Houses at Regent's Park, and previously 6 years at the Royal Exotic Nurseries, South Kensington, as Gardener to The Marchioness of Bute, St. John's Lodge, London, N.W.

Mr. C. Grigsby, for the last 8½ years Gardener to Mrs. VAUGHAN, Lapley, as Gardener to F. SCAR, Esq., Great Barr, Birmingham.

Mr. J. Chapman, formerly at Luton Hoo Garden, and for the past 2 years Foreman at Greneshurst Park, Capel, Surrey, as Gardener to J. H. DENNIS, Esq., at the same address.

Mr. H. Holland, previously Foreman at Warren House, Hayes, Kent, as Gardener to Mrs. MORRIS EYTON, Wood Eaton Manor, near Stafford. [Thanks for Is. for R.G.O.F. box.—Eds.]

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS'.—At the invitation of Messrs. Sutton and Sons the members of the above Association visited the Reading seed stores and trial grounds on July 22. The party was met at the head office by Messrs. Albury, Blaxill and Taylor, who conducted the visitors through the offices, seed stores, and order rooms explaining the uses of the many machines for winnowing, cleaning and grading the seeds. The seed-testing and germinating houses were visited, and also the range of greenhouses at the trial grounds, where batches of Begonias, Cyclamen, and many other flowers were giving promise of an excellent display of bloom. The party was entertained at tea by Messrs. Sutton.

BRISTOL AND DISTRICT GARDENERS'.—The monthly meeting of this Association was held at St. John's Parish Rooms on the 29th ult., Mr. H. Woodward presiding. The speaker for the evening was Mr. P. Thoday, who dealt with *Hippeastrums*, and gave instructions for the cultivation of these flowers. It was unanimously decided to help the Royal Horticultural Society's War Relief Fund, several members taking collecting cards for this purpose.

MARKETS.

COVENT GARDEN, August 4.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Achillea, per doz. bunches	3 0-4 0	Lily-of-the-Valley, per dozen bunches	21 0-24 0
Asters, white, per doz. bun.	4 0-5 0	— extra special	15 0-18 0
— pink, per doz. bun.	3 0-4 0	— special	—
— purple, per doz. bun.	3 0-5 0	— ordinary	—
— mauve, per doz. bun.	—	Marguerites, yellow, per doz. bun.	1 6-2 0
Carnations, per dozen blooms, best American varieties	0 9-1 3	— Catleya	8 0-10 0
— smaller, per doz. bunches	4 0-6 0	— Harrisonia	4 0-5 0
— Carola (Crimson), extra large	1 6-2 0	— Odontoglossum crispum	1 6-2 0
— Malmesbury, per doz. blooms	3 0-4 0	Pelargonium, per doz. bunches, double scarlet	4 0-6 0
— pink	3 0-4 0	— white, per doz. bunches	4 0-6 0
Chrysanthemums, white, per doz. blooms	1 0-2 6	Roses: per dozen blooms, Bride	1 0-1 6
Coreopsis, per doz. bunches	0 9-1 3	— Duchess of Wellington	—
Cornflower, per doz. bun., blue	1 3-1 6	— Frau Karl Druschki	0 9-1 0
Delphinium, per doz. bunches	3 0-6 0	— General Jacqueminot	0 4-0 6
Eucbaris, per doz. bunches	—	— Joseph Lowe	0 9-1 0
Gaillardia, per doz. bunches	1 0-1 3	— Lady Hingford Liberty	1 0-1 6
Gardenias per box of 15 and 18 blooms	2 6-3 0	— Madams A. Chateau	0 9-1 0
Gladioli:		— Melody	0 9-1 0
— Brecheyensis, per doz. spikes	1 6-2 0	— My Maryland	0 9-1 0
— The Bride (white)	3 0-4 0	— Niphetos	0 9-1 0
— America, per doz. spikes	1 0-1 6	— Prince de Bulgarie	—
— Halley (salmon)	1 0-1 6	— Richmond	0 9-1 6
— pink, per doz. spikes	0 9-1 3	— Sunburst	1 0-1 6
Gypsophila, paniculata, per doz. bunches	3 0-4 0	— White Crawford	1 0-2 0
— double, per doz. bun.	5 0-6 0	Scabiosa caucasica (mauve), per doz. bun.	2 0-2 6
Lapageria, per doz. blooms	1 6-2 0	Spiraea, white, per doz. bunches	—
Lilium longiflorum, per doz. long	3 6-4 0	Statice, mauve, per doz. bun.	4 0-6 0
— short	3 6-4 0	— white and yellow, per doz. bun.	4 0-6 0
— lancifolium album, long	2 0-2 3	Stephanotis, per 72 pips	1 0-1 6
— short	1 9-2 6	Stock, double white, per doz. bun.	5 0-8 0
Lilium lancifolium rubrum, per doz. long	1 6-1 9	— mauve, per doz. bunches	6 0-8 0
— short	0 9-1 0	Sultan, white, mauve, yellow, per doz. bun.	2 0-3 6
		Sweet Peas, per doz. bunches, special	4 0-5 0
		— ordinary	2 6-3 0
		Tuberose, per packet, 24 blooms	0 4-0 6
		White Heather, per doz. bunches	6 0-9 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Adiantum Fern (Maidenhair) best, per doz. bunches	3 0-4 0	Fern, French, per doz. bunches	0 6-0 8
Agrostis (Fairy Grass), per doz. bunches	2 0-4 0	— common	3 0-4 0
Asparagus plumosus, long trails, per half-dozen bunches	1 6-2 0	Galax leaves, green, per doz. bun.	2 0
— medium, doz.	12 0-13 0	Grasses, various, per doz. bun.	1 6-2 6
— Sprenger	6 0-12 0	Haidy foliage, various, per doz. bun.	2 6-4 0
Carnation foliage, doz. bunches	3 0-5 0	Lichen Moss, per doz. boxes	10 0-12 0
Croton foliage, doz. bunches	12 0-15 0	Moss, gross bunches	8 0
Cycas leaves, per doz.	—	Myrtle, doz. bnchs. English, small-leaved	6 0
Eulalia japonica, per bunch	1 0-1 6	— French, per doz. bunches	1 0-1 3

REMARKS.—Business has been brisker this week than formerly, the supplies being shorter. The greatest demand has been for white flowers; *Liliums*, *Asters*, *Stocks* and *Achillea* all realising high prices for the time of year. Carnations, particularly the white varieties, have been more popular, and although the prices advanced, all the supplies were sold out before closing time on Saturday. White *Asters* are more plentiful, but white *Stocks* are still scarce. A few blooms of white *Chrysanthemums* of the variety *Countess* find a ready sale, and will be more plentiful in a few days. *Lilies-of-the-Valley* are still scarce, but the quality of the flowers is much finer than formerly. There are abundant supplies of *Gypsophila paniculata*, and of the

double variety, which is particularly fine this season. There are plenty of varieties of *Gladioli*. Blue Cornflowers are still obtainable, as also are Iceland Poppies.

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

	s.d. s.d.		s.d. s.d.
Aralia Sieboldii, dozen	4 0-6 0	Ficus repens, 60's, per doz.	3 0-3 6
Arancaria excelsa, per dozen	18 0-21 0	Fuchsias, 48's, per dozen	6 0-8 0
Asparagus plumosus, per dozen	10 0-12 0	Geonoma gracilis, 60's, per dozen	6 0-8 0
— Sprenger	6 0-8 0	— larger, each	2 6-7 6
Aspidistra, per doz. green	18 0-30 0	Grevillea, 48's, per doz.	5 0-6 0
— variegated	30 0-60 0	Hydrangeas, pick, per doz.	6 0-9 0
Cacti, various, per tray of 15's	4 0	Kentia Belmoreana, per dozen	6 0-8 0
— tray of 12's	6 0	— Forsteriana, 60's, per dozen	4 0-8 0
Campanula isophylla, 48's, per dozen	8 0-9 0	— larger, per doz.	18 0-36 0
— alba	9 0-10 0	Latania borbonica, per dozen	12 0-30 0
Cocos Weddelliana, 48's, per doz.	18 0-30 0	Lilium longiflorum, per dozen	15 0-18 0
— 60's, per doz.	8 0-12 0	Marguerites, in 48's, per doz., white	4 0-6 0
Croton, per dozen	18 0-30 0	Pandanus Veitchii, per dozen	36 0-48 0
Dracaena, green, per dozen	10 0-12 0	Pelargonium zonale, 48's, per doz.	4 0-5 0
Ferns, in thumbs, per 100	8 0-12 0	Phoenix rupicola, each	2 6-21 0
— in small and large 60's	12 0-20 0	Spiraea, white, per dozen	—
— in 48's, per dozen	5 0-6 0	— pink, per doz.	—
— choicer sorts, per dozen	8 0-12 0	Verbena, Miss Willmott, 48's, per doz.	6 0-8 0
— in 32's, per doz.	10 0-18 0	Viscaria, 48's, per dozen	8 0-9 0
Ficus repens, 48's, per doz.	4 6-6 0		

REMARKS.—Many stands are empty in this department, and flowering plants now consist of *Marguerites*, *Campanulas*, *Lilium Harrisii*, and the pink *Verbena*, Miss Willmott. There is very little business done in this department during August, and foliage plants such as *Palms*, *Ferns*, and *Aspidistras* will be the chief attractions during the next few weeks.

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples—		Grapes, Muscat, per lb.	0 9-2 6
— Australasian, per box	15 0-17 0	Greengages, Conical, per box	5 0-14 0
— English cooking, per bus.	2 6-5 0	Loganberries, skip	1 0
— Dessert, per ½ bus.	4 0-6 6	Lychees, per doz. lbs.	17 0-18 0
Bananas, bunch:		Melons, each	1 6-2 0
— Medium	7 6	— French Cantaloupe, each	3 0-7 0
— X-medium	8 6	— Valencia, per case	10 0-15 0
— Extra	9 6	Nectarines, per doz.	1 0-10 0
— Double X	10 6	Nuts, Almonds, green, per lb.	0 6—
— Giant	11 0-14 0	— Brazils, new, per cwt.	65 0-75 0
— Red, per ton	£20	— Coconuts, per 100	24 0—
— Jamaica, per ton	£13-£14	— Walnuts, dried, per cwt.	75 0—
Cherries, English, per ½ bus.	6 0-14 0	Oranges, per case	10 0-16 6
— Morello, per ½ sieve	6 0-7 6	Peaches, English, per doz.	1 0-17 0
Currants, Black, per ½ bus.	8 0-9 0	Pears, Williams (4's) per box	5 6-6 6
— Red, per ½ bus.	4 0-6 0	Plums, per ½ bus.	3 6-5 6
Figs, per doz.	1 0-1 6	Raspberries, skips	1 6-2 0
Gooseberries, dessert, per lb.	0 6-0 7	— per doz. punnets	3 0-5 0
Grape Fruit, per 25 0-30 0			
Grapes: English, Black, per lb.	0 7-2 0		
— Canon Hall, per lb.	2 0-4 0		

REMARKS.—The season for Tasmanian Apples is over. The following English Apples are now obtainable: *Dessert* varieties, *Beauty of Bath*, *Gladstone* and *Quarendon*; and cooking varieties *Keswick Codlin* and *Lord Suffield*. *Cherries* of the varieties *Napoleon*, *Bizarreau*, *Turkey Heart*, and *Black Eagle* are still available. The supplies of dessert *Gooseberries* are equal to the demand. *Strawberries* are nearly over, but *Raspberries* are arriving from Scotland in fairly large quantities, packed in chip baskets containing about 4 lbs. English *Plums* of the varieties *Rivers's Early* and *Czar* are available, and from France the principal variety is *Royale*. *Greengages* from France and Spain are still plentiful. *Pears* are now arriving from the Continent and home growers, those from France being of the variety *Jargonelle* and the latter of the varieties *Chalk* and *Llamas*. The market continues to be well supplied with *Peaches* and *Nectarines*. Of *Figs*, the supply exceeds the demand, and *Melons* are plentiful. *Black Grapes* of all varieties are available at moderate prices and the supplies of *Muscad Grapes* are increasing daily. E. H. R., Covent Garden, August 4.

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, Globe, per doz.	1 6-2 6	Letts, per dozen	1 6-2 0
Anchovies, per doz.	3 0-3 6	Lettuce, Cabbage and Co., per doz.	0 9-2 0
Beans, Broad, per bag	4 0	Mushrooms, cultivated, per lb.	0 8-10 0
— French, per lb.	—	— Buttons	0 8-10 0
Beetroot, per bus.	2 0-2 6	— Outdoor, per ½ bus.	1 6-4 6
Cabbage, per tally	2 6-5 0	Mustard and Cress, per dozen punnets	0 10-1 0
Carrots, per cwt.	5 0	Onions, per cwt., Foreign	3 6-6 0
Cauliflowers, per doz.	3 0-4 0	— green, per doz. bunches	2 0—
Cucumbers, per doz.	2 0-3 0	— Valencia, per case	7 6-8 6
Garlic, per lb.	1 0-1 6		
Herbs, per doz. bunches	2 0-6 0		

Vegetables: Average Wholesale Prices—Continued.

	s.d.	s.d.		s.d.	s.d.
Peas, per bua. . .	40	56	Tomatoes, English, . .	20	43
Radishes, per doz. . .	10	13	per doz. . .	30	40
Scarlet Runners, . .	40	50	Vegetable Marrows, . .	50	—
per bushel . .	30	36	per tally . .	04	06
Shallots, per doz. . .	30	36	Watercress, p. doz. . .	04	06
Spinach, per bua. . .	30	36			

REMARKS.—Tomatoes are not so plentiful as is usual at this season of the year. Cucumbers are sufficiently numerous to satisfy the demand. Peas and Cauliflowers are scarce, but Runner and French Beans are now plentiful. The supplies of vegetable Marrows are increasing daily. Mushrooms are abundant. Business is fairly brisk in all departments.—E. H. R., Covent Garden, August 4.

New Potatoes.

	s.d.	s.d.		s.d.	s.d.
Bedford . . .	40	46	Kent. . .	46	50
Blackland . . .	39	40	Lincoln . . .	39	46

Old Potatoes.

3s. 6d. to 4s. 6d. per bag.

REMARKS.—Trade is slow, but the demand is quite equal to the supply. Old Tubers are not over, but are difficult to sell.—Edward J. Newborn, Covent Garden and St. Pancras, August 4.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending August 4.

A Cold and Very Wet Week.—This was another cold week for the time of year, but it was rather warmer than either of the three previous weeks. Previous to July 30 there had not been a single unseasonably warm day for three weeks, and the night of the 3rd inst. was also the warmest night for three weeks. The ground is at the present time 3° colder at 1 foot deep and 1° colder at 2 feet deep than is seasonable. Rain fell on five days and to the total depth of 1½ inches. During the week four gallons of rainwater have come through the bare soil percolation gauge, and a quarter of a gallon through that on which short grass is growing. No rainwater at all had come through the 2½ feet of soil in the latter gauge for nine weeks. Although twenty gallons of rain must have fallen upon this gauge since the middle of July, there was no percolation at all through it until the 3rd inst. During the same period twelve gallons of rainwater came through the bare soil gauge, which is the same size and depth as the other percolation gauge. The sun shone on an average for 6½ hours a day, which is three-quarters of an hour a day longer than is usual in August. Calms and light airs alone prevailed during the week. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 9 per cent.

JULY.

Cold and Exceptionally Wet.—This was a cold July. The first six days proved warm, but after that there was only one unseasonably warm day. The nights were more variable, but during the last three weeks they were mostly below the average in temperature. On the two warmest days the highest reading in the thermometer screen was 80°, and on the coldest night the exposed thermometer fell to 36°, a rather high extreme minimum for the month. Rain fell on seventeen days, and to the total depth of 4½ inches—which is nearly double the average quantity for July. In fact, we have to go back twenty years in order to find a July as wet. The sun shone on an average for 6½ hours a day, the average daily duration for the month. The winds were, as a rule, light, and in no hour did the mean velocity exceed twenty-one miles, direction west. For only thirty-seven hours was the direction of the wind any point between north and east. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 4 per cent. E. M.

CATALOGUES RECEIVED.

- E. P. DIXON AND SONS, LTD., Paragon Square, Hull.—Bulbs.
JOHN McKERCHAR, 35, Geisbach Road, Upper Holloway, London.—Retarded Bulbs, Roots, and Plants
AUSTIN AND MCASLAN, 89, Mitchell Street, Glasgow.—Bulbs.
DAVID W. THOMSON, 113, George Street, Edinburgh.—Bulbs.

SCHEDULES RECEIVED.

Scottish Horticultural Association's Chrysanthemum Exhibition, to be held in the Waverley Market, Edinburgh, November 19 and 20. Secretary, Mr. A. D. Richardson, 34, St. Andrew Square, Edinburgh.

ANSWERS TO CORRESPONDENTS.

There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance: for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self.—*Gardeners' Chronicle*, No. 1, Vol. I., January 2, 1811.

ASPIDISTRAS: *T.* Specimen leaves are necessary before we can offer advice.

CHERRY TREES UNFRUITFUL: *J. A. F.* Without inspecting the trees it is difficult to ascertain the cause of the failure, for Cherry trees which blossom profusely should bear fruit. As the trees were productive for the first few years after planting, the present failure may be caused by excessive vigour of growth, or there may be a deficiency of lime in the soil. Should the latter be the case dress the soil with an artificial compound in which there is a large percentage of phosphates, or with finely-crushed old mortar rubble—the former material, being quicker in action, is preferable. On no account apply either farmyard or stable manure, as they both contain a high percentage of nitrogen and ammonia, and no manure that encourages excessive wood growth is necessary in the case of stone fruits. If the growths are over luxuriant, root-prune the trees in the autumn when the leaves have fallen, and apply one of the dressings recommended, mixing it with the soil as it is replaced. Other reasons which may be causing the lack of fruit are that the roots may have penetrated into a cold, uncongenial subsoil, or the top growths may have become too thick. In either case the failure would be more marked owing to lack of lime in the soil. No stone fruit starts to form its stone so soon after the flowering stage as does the Cherry, hence the need of lime.

CHRYSANTHEMUM CULTURE: *Anxious.* It would have been better had you mentioned the names of the varieties of Chrysanthemums you are growing. As a general rule, it is advisable to secure the buds on all Japanese varieties now that August has commenced. A few varieties may be left without disbudding after this date, but only in the case of those that are likely to give another bud within three or four weeks. The flowers of White Queen, for example, open quickly, and are usually of good form and colour, but are not so large and heavy in the bloom as is the case when the buds are taken during the first fortnight in August. Very early buds may be retarded somewhat by placing the plants where they will receive a certain amount of shade during the hottest part of the day.

GRAPES DISEASED: *Regular Reader.* The Grapes are injured by black rot, and nothing can be done to save the present crop. Next season, when the leaves are unfolding, spray the vines with half-strength Bordeaux mixture, and repeat the operation at intervals. When the fruit is half-grown spray with ammoniacal solution of copper carbonate instead of the Bordeaux mixture, to avoid spotting the fruits.

NAMES OF PLANTS: *Gardener.* 1, Cupressus Lawsoniana; 2, Thuya occidentalis; 3, Cupressus Lawsoniana erecta; 4 and 5 are forms of Cupressus Lawsoniana.—*P. B. B.* 1, Rose White Pet; 2, Tilia platyphyllos var. asplenifolia; 3, Zelkova acuminata; 4, Prunus Laurocerasus var. colchica; 5, Acer campestre; 6, Spiraea canescens.—*W. H. C.* 1, Spiraea Lindleyana; 2 and 5, Spiraea discolor; 3, Spiraea Douglasii; 4, Spiraea japonica var. alba; 6, Tamarix pentandra; 7, Tamarix gallica; 8, Rose Lady Gay.—*Constant Reader.* 9, Thuya orientalis aurea; 10 and 14, Pseudotsuga Douglasii var. glauca (seedling forms); 11, Pseudotsuga Douglasii; 12, Juniperus Sabina;

13, Cupressus obtusa var. Crippsii; 15, Cedrus atlantica var. glauca; 16, Cedrus atlantica var. aurea; 17, Sequoia sempervirens; 18, Cupressus pisifera var.—*Rev. G. H.* Betula lutea.—*Perton.* 1, Justicia carnea; 2, Boronia elatior; 3, Sparmannia africana; 4, Buddleia variabilis; 5, Hibiscus rosa-sinensis Cooperi; 6, Weigela rosea; 7, Vitis heterophylla variegata; 8, Phyllanthus atropurpureus; 9, Phyllanthus nivosus; 10, Juniperus procera; 11, cannot name without flowers.

NAMES OF FRUITS: *W. E.* The Gooseberries are 1, Whitesmith; 2, Queen of Trumps; 3, White Sulphur; 4, Champagne; 5, Beauty of England; 6, Ocean Green.—*H. S.* 1, Madresfield Court; 2, Black Hamburg.

NECTARINES: *H. B.* Reply delayed until the next issue.

ORANGE TREE FAILING: *F. C. W.* The cause of the Orange trees producing so few flowers and fruits is due to lack of light. Oranges thrive best in a large, light, span-roofed house, into which air can be admitted freely during hot weather. When in active growth they require a liberal supply of water at the roots, and to be frequently syringed overhead, except at the flowering stage. The temperature of the house should not fall below 50° in the winter months, and as the days lengthen the temperature may be increased by 10° or 15°. In these conditions the trees should commence to flower in January, and, providing they receive proper treatment afterwards, the fruits should reach maturity in the following December.

ORCHARD FAILING TO PRODUCE FRUIT: *Col. Cosby.* Unless you have kept records of temperature in the orchard, 4 feet from the ground level, while the trees were in blossom there is no assurance that the failure to fruit is due to frost. Less than 4° of frost would not kill the blossom unless the trees were wet when it occurred, and it seems improbable that frost of even such a moderate degree of severity occurs year after year at flowering time in your part of Ireland. Unless you are sure that frost has caused the failure it would not be worth while to try the expense of heating or tiffany, and the latter might hinder the pollinating action of insects. Colorado heaters have been tried by growers in this country, including a few at Evesham, but we have not seen any definite reports of results. If the Apples, Pears and Plums are of different varieties, lack of pollination is not to be presumed. If the trees have made rampant wood growth, root-pruning might be tried, unless there is evidence of frost having been the cause of the failure.

TOMATO DISEASED: *T. D. H.* A bacterial disease is present. The plant was infected when in flower, the bacteria being carried by insects, entering through the stigma. Destroy the plant to prevent the disease spreading.

VIOLA DISEASED: *D. McL.* The plants are injured by Puccinia violae, the Violet rust, which is a very deep-seated disease. Remove the plants to fresh ground and spray them every four days with liver of sulphur, mixed at the strength of 1 oz. in six gallons of water.

WILLOW: *A. W.* The abnormal growth on the Willow is apparently a young stage of the 'Witches' Broom, caused by the mite Eriophyes tritardialis Mal. It was described in the *Gardeners' Chronicle* so long ago as June 28, 1856.

Communications Received.—*T. S.*, Berks (many thanks for your communication)—*B. G.*—*C. T. D.*—*H. J. M.*—*W. B. H.*—*P. T. H.*—*S. T.*—*E. H.*—*M. J. W.*—*H. K. H.*—*E. S.*—*J. K. B.*—*W. C. C.*—*C. H. P.*—*W. K.*—*E. S.*—*E. M.*—*E. H.*—*L. H.*—*F. C.*—*A. J. E.*—*Rev. G. H.*—*P. B.*—*W. H. C.*—*T. G.*—*L. K.*—*T. D. H.*—*G. W.*—*R. G. W.*—*J. M. H.*—*H. P.* (see report of Scientific Committee, p. 92)—*G. F.*—*B. P. L.*—*R. A. M.*—*Sir H. V.*—*Anxious*—*W. V. H.*—*Hon. V. G.*—*A. J. C.*—*J. H.*—*S. W.*—*H. C. B.*—*J. B.*—*T. S.*—*R. T. W.*—*A.*

THE Gardeners' Chronicle

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JAVA.

A TROPICAL land, full of charm and of rare beauty, peculiar in that it is almost crowded with volcanoes; indescribable in its entirety, yet easy to describe in so far as the eye can grasp its outer aspect; one huge garden—a garden island, in fact, but a market garden—a land in which Nature has been resolutely taken in hand by man and all but entirely put under control to his ends.

Many of those who think of Java probably picture it as a region where Nature runs wild for the most part, forgetting the teeming millions of its population. Though its area, nearly four times that of Holland, is under 50,000 square miles, its people now number at least 34 millions, and parts are far more densely populated than any region in Europe. Characteristic of Java is its wonderful system of roads, the existence of which, in no slight degree, now serves to excuse early Dutch tyranny over the natives. The greatest length of the island is 622 miles, its greatest width 121. A railway traverses it almost from extreme East to West; the journey, by day, from Soerabaia to Batavia occupies about a day and a half, and it is all through interesting country. But the way to appreciate the character and charms of Java is to travel through it by motor-car. England has nearly twice its population, but everyone who has motored through our country is aware that, though villages are frequent, the number of their inhabitants is always small; nowhere are crowds met with, and few labourers are to be seen in the fields, even at harvest-time. In Java there are crowds everywhere. Travelling along the high roads the motorist passes, in quick succession, village after village, and is constantly obliged to be on guard on account of the large number of people and the numerous slow-moving bullock-wagons on the roads, particularly in the

early morning and in the evening; time after time he will come upon village market places in which many hundreds, if not thousands, are assembled. And the scene is not only full of movement but also has an indescribable charm of patterned colour, owing to the picturesque character of the native dress. Almost everywhere the roads are embowered by shade trees growing from either side.

Travelling by train from Soerabaia in the east to Djocjokarta—the capital of middle Java and the seat of its ancient rulers—through a region which on the whole is flat, hills and an occasional volcanic cone being sighted only in the distance, the country appears as a great cultivated Plain broken up into small and often irregular flat sections—terraced to facilitate irrigation wherever there is sloping ground; Rice, Sugar-cane, Tobacco, patches of leguminous crops, Cassava, are to be seen growing every-

fig. 32), in European eyes, the landscape probably merits the epithet "tropical" mainly on account of the constant appearance of this wonderful Palm, though the effect is greatly enhanced by its conjunction with giant Bamboos.

Java, in some respects, is like England. Both countries have been brought all but entirely under cultivation, and little, if anything, is to be seen of the primeval vegetation by which they were once covered—at least away from the mountains in Java. But whereas in England pasture fills the eye and tells of scarcity of labour, in Java there is no pasture, and the evidence of labour is overwhelming; in England the machine seems everywhere to do the work, the man being merely its director, as on the American and Australian continents; in Java man is the machine. A rude plough drawn by buffalo or bullock is often used in the Rice-fields, but even in these the greater part of the

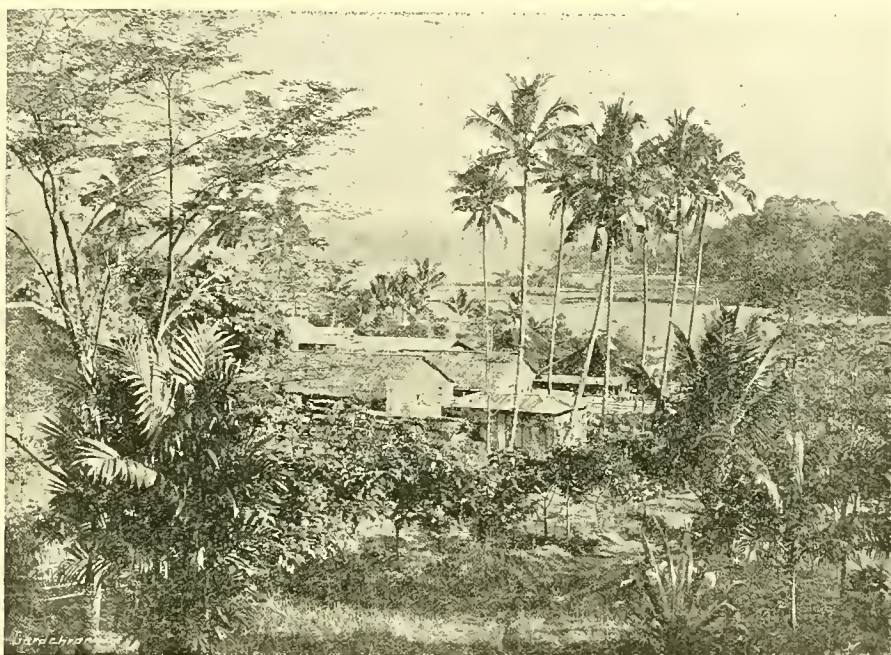


FIG. 31.—COFFEE PLANTATION IN JAVA.

where, or preparations are being made for their growth; away from the hills, uncultivated ground and rank natural growth are rarely, if ever, to be noticed. The fields are interrupted by great leafy enclosures at frequent intervals, so frequent that they almost touch—these are the compounds or villages in which the natives live. They are as artificial as the fields—moreover, all of one type; an outer ring of magnificent Bamboos forms a close enclosure within which are placed the lightly built native huts; a few deciduous trees and a variety of Palms and the unfailing Banana grow within this enclosure. The feature which gives the compound its peculiar place in the outlook and most strikes the traveller's eye, however, is the Coco-nut Palm, ranging upwards commandingly above most other trees, with its peculiarly characteristic crown of feathered leafage and its cluster of great fruits.

Apart from the irrigated Rice-fields (see

tillage is effected by hand—indeed, nothing is more astonishing in the Orient than to see a crop of this kind, which we rate at so low a value, planted out by hand (see fig. 32), even transplanted at times when it is necessary to eliminate weeds.

Java is now a great sugar-producing country, and it is to be expected that this industry will be greatly extended in the not distant future—the output is already over a million and a half tons per annum. Strange to say, the one difficulty to be overcome in order that new areas may be developed is lack of labour—the native population is hard to move from its birth-place. Not so long ago the industry was bankrupt, but now prosperity reigns everywhere—the plantations are highly cultivated, attention is being given to improved varieties of cane of greater sugar-producing power, steam tramways are laid down on the roads to convey the cane to the crushing mills, and the factories are

provided with up-to-date machinery. Last but not least, the introduction of the motor-car has made life not only endurable but pleasant for the European superintendent; he can not only move about freely and rapidly over a large estate, but in so doing enjoys cool and healthful exercise. If the growth of cane sugar can be placed under proper scientific supervision in tropical lands generally there will be far less occasion to grow Beet sugar in Europe—probably none in England; our task, in fact, should be to regard the problem imperially and to develop the industry where it can best flourish.

The cultivation of Tobacco is also being systematised and extended; Quinine, Cocoa, Coffee, Tea, Kapok and Rubber are other products of importance. Java owes its fertility not merely to its moist climate but largely also to its volcanic soil—hence its superiority over Ceylon, where poor lateritic soils prevail. One of the most interesting volcanic centres is easily reached from Soerabaya, the excursion out and back lasting only two days. The photograph reproduced in fig. 34 shows the view at Moengal, 8,000 feet above sea level, from the edge of a former great crater, several miles across, inside which several minor craters have been thrown up in later times, and now

Maize or Potatoes, the latter of most excellent quality as we subsequently discovered. Nothing of the original forest was to be seen on the hill tops, but Casuarina trees had been planted freely and formed a most graceful feature in the landscape.

Of the five great islands in the Indian archipelago—Borneo, Celebes, Java, New Guinea and Sumatra—Java is the smallest; it alone, however, has a civilised population and is thoroughly developed; in the adjacent island of Sumatra, a land of extraordinary promise, the Dutch have not yet brought the natives entirely into subjection. The contrast is made all the greater by the existence in Java of the monumental pile of Boro Budur, a hill summit enwrapped with the complete life-history of Buddha in sculptured stone—a proof of the presence in the island in the past of a great Hindu civilisation; the building is well figured in the *Encyclopaedia Britannica*.

Java, like many other countries, is now at the parting of the ways. Whatever view the traveller may form of the intelligence of the people, he cannot but feel that they are eminently suited to their surroundings, and that, however able Europeans may be to direct and promote the labours of such a native population, it is very

by their dress, which is in perfect harmony with the surroundings; their love of their native music, too, is proof that the aesthetic plane upon which they stand is by no means low; indeed, there is reason to think that they are in advance of their white brethren in rural England in such matters. Where ignorance is bliss 'tis folly to be wise. So long as it was possible to assume that education might have some permanent effect upon the individual we were able to persuade ourselves that the school might be of substantial value to all sections of the community; but now that we are forced to admit that so-called acquired characters are not heritable, our belief in the power of the book is much diminished, especially as the war is showing us that the barbarian is only made more effectively a barbarian by culture. It were time that we called a halt and put aside purely artificial and useless forms of training in favour of natural forms, otherwise there can be no return to the land. H. E. A.

THE MARKET FRUIT GARDEN.

RAIN fell on twelve days in July at my station, amounting to 3.81 inches. It was welcome for fruit trees and for softening the ground for the hoe. The expected effect in swelling Apples has not been very striking at present, possibly because the temperature of the month was generally abnormally cold. But varieties which were very badly attacked by the aphid had their foliage so much spoilt that the trees cannot produce much fruit of full size.

WITHERED LEAVES ON APPLES.

Some varieties of Apples have a great many leaves withered, in addition to those which show traces of having been spoilt by the aphid. This statement includes some cases in which the trees have not been sprayed this season, some young specimen Bramley's Seedling among them. I have not been able to ascertain the cause of the withering, although specimens have been sent to a mycologist. Possibly it was the prolonged prevalence of north-east or north-west winds when the leaves were tender.

A NEW APPLE DISEASE.

A disease, apparently of fungous character, has attacked Worcester Pearmain somewhat extensively. The attack commenced in June or early in July at the eye of each Apple. A narrow depression, irregularly circular in shape, showed first, and this steadily extended until the diseased area had spread nearly over the whole crown of the fruit, then showing concentric rings of mould, somewhat like those of brown rot, but still different. In most cases, apparently, as the disease advanced the rings disappeared, the affected space becoming flat, bald and quite soft from rot, which was found to have destroyed the tissues of the fruit down to the pips. The disease invariably started at the eye of the Apple, whereas a brown rot attack is found on the cheek. The growth of an Apple appears to have been stopped as soon as it was attacked, all the affected fruits being below medium size.

THE DROPPING OF EARLY APPLES.

It is a pity that early Apples are such inveterate droppers as are most of them. I am not referring to fruits containing the grub of the codlin moth or to fruits affected by any pest, but to specimens that fall for no apparent reason. Beauty of Bath, Mr. Gladstone, Striped Juneating and Early Julian all have this fault. If the fallen fruits from the two first named are picked up to-day the ground under the trees may be half covered with fresh ones to-morrow. If only thoroughly ripened fruit dropped the result might be prevented by repeated gathering of fairly coloured Apples, but the grey fruits of Beauty of Bath particularly drop more than the red ones. Moreover, the dropping takes place in still weather. It is tiresome to have picking-up done every day after ripening



FIG. 32.—JAVA : PLANTING RICE.
(See p. 95.)

stand in a sandy plain within it; the latest of these (the Bromo), shown on the left of the picture, is still active; a larger active volcano (Smeroe), over 12,000 feet high, is shown in the far distance. No sight in Java is better worth seeing. At the time of our visit the Bromo showed but slight signs of activity; the crater, though small, is a wonderfully perfect inverted pyramid, and its inner surface is most exquisitely coloured in every shade of yellow and brown.

In visiting the Tenger region we were also able to see that, in some districts, the highlands of Java are as well cultivated as the lowlands. On our way to the Bromo, leaving Pasaruan railway station, we motored up through a more or less deserted hill region, formerly under Coffee, but now overgrown by the shade trees; several good houses on the way, in which Coffee planters had lived formerly, were in the occupation of wealthy Chinese—the Chinese are the traders in Java, and own practically all the shops in the towns. As we approached the hill station at Tosari, 6,000 feet above the Plain, which is fast becoming a popular health resort on account of its cool climate, we found the steep slopes everywhere under cultivation, cropped either with

necessary that they should give heed in advising and organising, and not allow themselves to overlook the differences between their own temperament and abilities and those of the people over whom they are set in authority.

Hitherto the school has played no part in Java, but steps are being taken by the Dutch to provide instruction for the natives. It is a grave question whether the attempt will prove to be in any way in the interests of the people, as it cannot easily be made of such a character that it will suit local conditions.

The limited outlook of the teacher—patent everywhere—is bound to operate unfavourably. Our own attempts since 1870 to deal with our rural population have been such a hopeless failure, and we English have such reason to rue the policy of enforcing our Western ideas upon the Orient that we cannot but have grave misgivings of the result of veneering the Javanese with educational tenets made in Europe.

We live in days when rural education is much under discussion, and the release of our children from school so that they may learn the ways of the land is being more and more pressed upon us; much can be learnt in the Orient of the superior value of ignorance. That the simple folk in Java are full of artistic feeling is shown

begins till the trees can be stripped, and if the Apples are left on the ground many of them get pecked by birds, and they regard Beauty of Bath as a great favourite. The fault is a serious drawback to the growing of this valuable Apple, the best of early dessert Apples, in my opinion. Nor is this the only drawback, for the variety is a favourite with the aphid and the wasp, as well as with birds. This season, mainly in consequence of the aphid blight, but partly on account of the June drought, the proportion of full-sized fruits has been extremely small, and that of thirds and mere "scrumps" very large.

EARLY MARKETING OF FRUIT.

Wonder is often expressed at fruit growers sending immature fruits to market. But, without defending such a barbarism as the marketing of Bramley's Seedling, or any other long-keeping variety, in the latter part of July or early in August, there is much to be said for the early selling of immature fruit. Green Plums marketed before the glut of the season often make more money than they would realise if left on the trees till they are well coloured, and I have known the thinnings of Early Julyan Apples to sell at a higher price than was obtained later for mature fruit. Similarly, in seasons of abundance, Gooseberries of half-size and Black Currants not nearly all coloured may make more money than they would have made had they been left to mature. Of course, the explanation is that early prices are usually the highest, or higher than any but the latest, for which only growers in late districts can cater.

FRUIT PRICES.

Up to the present the prices of fruit have been highly or fairly satisfactory. Gooseberries and Black Currants sold remarkably well, and other small fruit and early Plums and Apples at least fairly. These remarks are written, however, before the glut of the season, if there is to be one, has commenced. In consequence of the aphid blight and other contributory causes, it seems to be almost certain that the supplies of Apples of good size will be comparatively small. *A Southern Grower.*

FORESTRY.

OAK SEEDLINGS AT ELGIN.

SOME time ago the Elgin Town Council, the proprietors of the fine old wood known as the Elgin Oak Wood, agreed to place at the disposal of the Aberdeen and North of Scotland College of Agriculture, for demonstrative purposes, some few acres of the wood. Mr. Peter Leslie, lecturer in forestry at the College, took charge of the experiments. The Birch and Fir trees were cleared out, and the Oaks remaining numbered about 15 or 20 per acre. These were under-planted with Douglas Fir, Abies grandis and Thuja gigantea. The thinning out of all the trees except the Oaks for the under-planting with the new species has had a result which was not anticipated. The whole of the ground of the experimental area has now become thickly studded with young Oaks. On examination these are found to be attached to acorns in the soil. The acorns must have been sown by the old wood last autumn, and were afforded an opportunity of germinating by the removal of the Birch and Fir. The young plants are healthy and strong. The results throw a light on the natural distribution of the Oak, as many believed that the climate of North-East Scotland was too cold for the Oak naturally to reproduce itself.

The Elgin Oak Wood has been an Oak wood from time immemorial, and there are records of Edward I. living in the district and enjoying the chase in it and adjoining wood. Experts thought the climate had greatly deteriorated since those far-off days, but the result of thinning at Elgin shows that the Oak can still readily reproduce itself in the North-East of Scotland. *Correspondent.*

VEGETABLES.

It is gratifying to notice the increased interest taken in the cultivation of vegetables, an interest proved by the large number of inquiries which reach me by post from various parts of the country. If the war does nothing else, it will have taught many people how much Great Britain has been dependent on foreign countries for its food supplies, and how urgent it is that efforts should be made to raise a larger proportion ourselves. The amount of waste ground suitable for cropping in nearly every county is appalling. I refer only to sites which are practically idle, but the land which is already under cultivation is not made to produce anything like what it should do, and this should be thoroughly brought home to every cultivator.

At this season particularly every effort should be made to see that all spare ground is occupied with some kind of vegetable, so that there may be plenty of fresh vegetables during the coming winter and spring. August is one of the best months in the whole year for stocking the ground. There is yet time for putting out any spare plants of what is generally termed

planted in various aspects rather than one large one.

SPINACH.—Three sowings at least should be made during the present month and two in September to guarantee a regular supply.

TURNIPS should be sown every ten days during the next six weeks.

ONIONS.—Few vegetables are in greater demand in every household the whole year through than Onions. It is only during the past few years that householders have begun to realise that specimens superior to the Spanish bulbs can be cultivated in this country. Fortunately, by adopting proper methods, the Onion may be cultivated in the same site for an indefinite number of years. From the middle to the end of the month seed of the varieties generally known as Winter Onions should be sown largely in well-tilled and very firm ground.

ENDIVE AND LETTUCE.—Sow small quantities weekly during the present month for raising plants for cultivating in frames during winter.

PARSLEY.—This should be sown near the glass in cold frames.

CARROTS.—Where young Carrots are in request during the winter months two sowings



FIG. 33.—JAVA: TERRACED RICE-FIELDS IN VALLEY.

(See p. 95.)

winter greens. Among the most important are Savoys of all kinds; these are frequently planted too early, and in consequence are injured by severe weather, whilst late plantations are often proof against frost. Kales of sorts and Coleworts may be largely planted providing the ground has been well worked for previous crops. There will be no need for digging; holes should be made with an iron bar and the plants well watered in, afterwards pricking over the surface about 3 inches deep with a garden fork.

CELERY may still be planted in large quantities for late supplies, planting three rows in a trench. Select as far as possible the more hardy varieties, bearing in mind that the reds and pinks are generally more hardy than white Celery; lift with good balls of soil, shorten the longest leaves, plant very firmly, and apply a thorough watering.

BEANS.—Any spare plants left in the seed-beds should be planted in good ground.

CABBAGES.—There is no more important vegetable than the Spring Cabbage. The last sowing should be made not later than the middle of the present month. Two or three plots should be

should be made in frames, on old hot-beds if possible, in full sun. The stump-rooted, quick maturing varieties should be chosen for this purpose.

The foregoing kinds are amongst the most important vegetables, though there are many others which may claim attention. Let me emphasise the importance of producing all that is possible. It is pleasing to notice that the majority of crops, owing to the welcome rain, are in splendid condition, and by exercising due care our markets should be well supplied. *Edwin Beckett.*

PEA QUITE CONTENT.

ONE of the finest examples of Pea cultivation possible was to be seen a short time since at Aldenham, where this Pea was raised. Mr. Beckett sowed a row 100 yards long of the variety Quite Content to test the variety as an economical Pea, in the same way any market grower would cultivate it, and without adopting exhibition cultivation. The ground was deeply trenched and heavily manured. The seed was sown 6 inches apart. The haulm grew vigorously up to 7 feet high. No topping was prac-

tised, nor any disbudding or thinning of the pods; the plants were firmly supported and allowed to grow normally. As many as 20 bushels of Peas could have been gathered at one time from this row. The pods averaged 6 inches long and most of them contained ten large, deep-green Peas. Such a result fully demonstrates the value of this Pea, not only as an exhibition variety but as an economical sort also. I have heard it said that the huge pods of this Pea do not fill well, but such a display as this proves that it does. *E. Molyneux.*

FRUIT REGISTER.

RED CURRANT FAY'S PROLIFIC.

Those who appreciate a handsome bunch of Red Currants should certainly plant this variety. It is not unusual to have bunches of fruit 6 inches long, bearing as many as twelve large Currants. The colour and flavour, too, are all that could be desired. *E.*



FIG. 34.—JAVA : ZANDZEE FROM THE PENANDJAHAN.

(See p. 96.)

ORCHID NOTES AND CLEANINGS.

DENDROBIUM O'BRIENIANUM STRIATUM.

A SLENDER, drooping, many-flowered inflorescence of the striped variety of this greenish-white species (see *Gardeners' Chronicle*, February 27, 1892, p. 266), is sent from the gardens of Mr. Harry Whateley, Kenilworth. It differs from the usual type in having rather larger flowers, which are about 1 inch long. The sepals and petals are of a greenish shade, prettily striped with reddish purple, the labellum being similarly coloured. Although not a very showy species, its gracefully arranged flower-spikes make it attractive.

Disa grandiflora does well with Mr. Whateley, and this season has been unusually successful, having given a fine display of its large, scarlet flowers.

ANSELLIA AFRICANA LUTEA.

A FINE inflorescence of the plant known in gardens as *Ansellia africana lutea* and *A. africana natalensis*, is sent by Mr. W. H. Bacon, gardener to Sir Marcus Samuel, The Mote, Maidstone, the plant having been collected in South Africa. The large and well-displayed flowers are yellow with a slight green tint, the petals having sepia-brown spotting and the side lobes of the lip lines of the same colour. The sepals

also have an occasional brown spot. In the markings of the flowers the *Ansellias* of this section vary from unspotted forms to those in which all the segments are blotched. It is the *Ansellia gigantea* of Reichenbach, but the variation in the forms is so great, gradually merging from those of West Africa to East, that the differences seem to be more floral than botanical.

ORCHIDS AT THE WARREN HOUSE, STANMORE.

IN Mrs. Bischoffsheim's garden only species of Orchids were grown formerly, and very fine shows were made by *Cattleya Mossiae* and other large-flowered *Cattleyas* in their season. But between the flowering periods of the species, and especially in winter, there were intervals of scarcity of bloom. Consequently hybrids were included and provision made for raising showy crosses, work in which Mr. F. Jones, the Orchid grower at The Warren House, is getting good results.

The value of hybrids for giving variety and beauty to the display in the Orchid houses is

NEW OR NOTEWORTHY PLANTS.

JAPANESE SPECIES OF PICEA AND ABIES.

(See fig. 36.)

PICEA KOYAMAI, SHIRASAWA.

THIS new species was first discovered in 1911, on Mount Yatsugatake, in Shinano province, at an elevation of 1,500-2,000m., where it forms in a valley a pure stand in the midst of a forest of *Larix leptolepis*. A tree of forty to fifty years of age is 10m. tall, with a straight trunk 25cm. in diameter, and has erect-spreading branches forming a conical head very like a young tree of *Picea excelsa*. Old trees are very few. Bud conical, moderately large, brown, and covered with resin. Young shoot reddish-brown and glabrous; leaf-cushion prominent, ascending 15mm. long. Leaves crowded obliquely on the branchlets, dark green, short, stoutish, obtuse, almost straight, but sometimes a little incurved, 7-13mm. long, 1.5mm. wide, marked on each face by rows of stomata, which are especially numerous on the upper surface and bright greyish in appearance; in cross section quadrangular, somewhat flattened; resin canals two (rarely one), lateral and marginal. Cone projected almost horizontally, but pendulous when mature, obovate-oblong, abruptly narrowed near the summit to form an acute apex; yellowish-green, brownish when ripe, 3-6cm. long, 2.5cm. in diameter. Scales 1.5-1.7cm. long, 1-1.5cm. wide, broadly obovate, margin rounded, brownish, broadly wedge-shaped at the base; bract 3mm. long, 2mm. wide, acute, and irregularly toothed. Seed small, 3mm. long, 1.6mm. wide; wing broadly lance-shaped, entire, margin brown, lustrous, 12mm. long, 6mm. wide. I have named this new species in honour of Mr. Koyama, its discoverer.

PICEA BICOLOR MAYR VAR. ACICULARIS, SHIRASAWA ET KOYAMA.

(*ABIES ACICULARIS* MAXIM., *P. JAPONICA* REGEL.)

This variety has a very limited distribution, and we have only found it on Mount Yatsugatake at 1,500-2,000m. above the sea in mixed forest of *Larix leptolepis*, *Pinus koraiensis*, *P. parviflora*, and certain deciduous broad-leaved trees. Aged trees are very few. Trees of about forty years of age are 10m. in height, 25cm. in diameter. In young trees the branches are erect-spreading, forming a broad conical crown; bark dark grey, fissured, with long, shallow clefts which are dark brown within; young shoots dark brown on the upper side, yellowish-brown below, with fine brown hairs which are more abundant and more persistent on the upper side than on the lower; leaf-cushion moderately ascending, the upper portion 1-1.3mm. long, projected at an acute angle from the shoot; but short, broad, purple-brown, lustrous, firmly covered with greyish-coloured resin. Leaves linear, obscurely 4-angled, pointed but not so sharp as those of the typical *Picea bicolor*; upper face with bluish-white rows of stomata, 15mm. long, 1mm. wide, quadrangular in cross-section, with two resin canals each situated on the lateral margin; the leaves are crowded obliquely and spirally around the branchlets, those of the under side of the shoot upturned by the twisting of the petiole. Cone pendulous, ovoid-cylindrical, 7-10cm. long, 2.5cm. (4cm. when open) in diameter, uniform in shape, always smaller than those of the typical *Picea bicolor*; when mature bright brown, lustrous; scales obovate, thin, entire, margin sometimes finely toothed, not undulate, 2cm. long, 1.5cm. wide; bract small, rhombic to narrow, elliptical, finely toothed, 5mm. long, 2mm. wide. Seed obovate, dark brown, 3mm. long, 2mm. wide; wing four or five times as long as seed, 5mm. wide, oblong, elliptic, entire, bright brown, lustrous. Wood white, somewhat lustrous; specific gravity 0.53 in air-dry, and 0.43 in absolute dry; annual

rings in old trees very close and regular; bark dark reddish-brown, peeling off in thin patches like that of a Pine. This variety is distinguished from the typical *Picea bicolor* Mayr by its densely crowded, long, linear and mostly incurved bluish-white leaves, and by its entire, smooth, and not undulate cone scales. It is difficult to reconcile in all respects the descriptions of the species named by Maximowicz and Regel, *Abies acicularis* and *Picea japonica* respectively. These are very incomplete so we have given a new description and name to this Spruce as a variety of *Picea bicolor* Mayr.

PICEA BICOLOR MAYR VAR. *REFLEXA*,
SHIRASAWA AND KOYAMA.

This variety is found in the valleys of Oi and Haya rivers in the region of Mount Shirane in the prefecture of Yamanashi, Central Japan, from 1,500-1,800m. above the sea, mixed with *Tsuga diversifolia*, *Pinus koraiensis*, *Pinus parviflora*, *Abies Veitchii* and *Picea hondoensis*. A tree of some forty years of age is 15m. in height, with a straight trunk and a pyramidal crown of horizontally spreading branches; bark on trunk of mature trees peeling off in small, thin scales. Young shoots bright brown, covered with hairs; bud short, conical, reddish-purple, lustrous and without resin. Leaves more or less incurved, flattened, sharp pointed, four edged, upper sides bluish-white, 8-14mm. long, 1mm. wide. Cone oblong, bright reddish-brown when mature, 7-8cm. long, 2.5cm. wide; scales broadly ovate, thin, almost entire, often occasionally a little toothed or notched, but not undulate, as in the case of typical *Picea bicolor* Mayr; summit of scales in ripe cone tongue-shaped, and reflexed at the apex, bright brown, lustrous; bract small, pointed, 3mm. long. Seed oblong-obovate, dark brown, wing four times as long as seed.

Notwithstanding the fact that the habit of this tree is very similar to that of typical *Picea bicolor* Mayr, we are able to distinguish it easily by the broad and reflexed apices of the cone-scales.

PICEA MAXIMOWICZII REGEL, SYN. *ABIES*
OBOVATA JAPONICA MAXIM.

PICEA EXCELSA LIN. VAR. *OBOVATA JAPONICA*
MAXIM. *PICEA TSCHONOSKII* MAYR.

This species was first described by Maximowicz, but its native place was unknown to him. Two years ago it was discovered on the mountain ranges of Shinano province, Central Japan, where it forms a mixed stand with *Pinus koraiensis*, *Picea bicolor* var. *acicularis* and *Larix leptolepis*, and sometimes with other species of *Picea*. A magnificent tree of this species is growing in the garden of the village temple at Kawakami. This tree is 50m. tall and 1.7m. in diameter, with stout horizontally spreading branches. The shoots are bright reddish-brown, the old branches are glabrous and dark brown; leaf-cushion descending, leaf-scars almost rhombic; bud short, stout, conical, reddish-brown, lustrous and covered with resin. Leaves on old branches 4-angled, short, 7-12mm. long, stout, straight, obtuse, on the young shoots and on the branches growing in the shade linear, pungent, crowded almost perpendicularly around the axis, rhombic in cross section, resin canals two (rarely one), lateral and marginal. Cone pendulous, greenish-yellow, oblong or spindle-shaped, 4-7cm. long, 1.5-2.5cm. diameter; scales obovate, short, flat, rounded at the summit, wedge-shaped at the base; bract broadly linear, apex somewhat prolonged, very thin, 4mm. long, 1.5mm. wide. Seed obovate, somewhat flattened, contracted at the base, brownish-grey, 3mm. long, 2mm. wide; wing three times as large as seed, 5mm. wide, sometimes obscurely toothed. Wood white, annual rings, very often with broad, longitudinal resin clefts; specific gravity 0.52 in air-dry, 0.46 in absolute dry. The bark on an old trunk is moderately thick, scaly, longitudinally fissured, dark brown, passing to greyish-white.

This Spruce is very rare, and in habit and aspect we can scarcely distinguish it from *Picea polita*. It is probable that in ancient times big trees were standing here and there in large numbers, but during the last fifty years they have been exterminated by axe and fire, and nowadays a big tree is only to be found in temple grounds or in private gardens.

ABIES VEITCHII LINDLEY VAR. *OLIVACEA*.
SHIRASAWA.

This tree grows on the higher mountain ranges of Central Japan (Fuji, Shirane, Nikko, etc.) at 2,500m. above the sea, mixed with the typical *Abies Veitchii*. The trunk, branches and leaves are similar to those of *Abies Veitchii*. Cone cylindrical, abruptly tapering at summit, 7cm. long, 2.5cm. in diameter, olive-yellow; scales thick, 10mm. long, 15mm. wide at the summit, half-moon-shaped, somewhat flattened at the base, narrowed to a short pedicel, olive-yellow above, bright brown below, margin rounded and deep violet; bract almost as long as the scale. Seed obovate, three-edged, wing thin, rounded at the summit, deep bluish violet, lustrous. This species is easily distinguished from typical *Abies Veitchii* Lindley, and also *Abies Veitchii* var. *nikoensis* Mayr, by its olive-grey cone. *Homi Shirasawa*.

THE FLOWERS OF MILTON.

(Continued from p. 89.)

OAK

1. Hollow'd bodies made of Oak or Firr.
P. L. VI. 574.
2. Under the Covert of some ancient Oak.
P. R. I. 305.
3. Gently o'er the accustomed Oke.
Il Penseroso, 60.
4. Pine or monumental Oake.
Il Penseroso, 135.
5. I only with an Oaken Staff will meet thee.
Samson Agonistes, 1123.
6. I live in Oaken bower.
Arcades, 45.
7. When Heaven's fire
Hath scath'd the Forrest Oaks.
P. L. I. 613.
8. Sturdiest Oaks
Bow'd their stiff necks.
P. R. IV. 417.
9. Thus sang the uncouth swain to the Oakes and Rills.
Lycidas, 186.
10. A Cottage Chimney smokes,
From betwixt two aged Oakes.
L'Allegro, 81.

OLIVE.

1. See there the Olive grove of Academe.
P. R. IV. 244.
2. In his bill
An Olive leaf he brings, pacific signe.
P. L. XI. 859.
3. Peace crown'd with Olive green came softly sliding.
Od. Nat. 47.

Milton must have known the Olive well, but he only speaks of it as the emblem of peace.

OSIER.

- By the rushy-fringed bank
Where grows the Willow and the Osier dank.
Comus, 889.

PALM.

1. Cedar, and Pine, and Firr, and Branching Palm.
P. L. IV. 139.
2. They went
Shaded with branching Palm.
P. L. VI. 885.
3. Of stateliest Covert, Cedar, Pine or Palme.
P. L. IX. 435.
4. Of Laurel ever green and branching Palm.
S. Agonistes, 1735.
5. Than fruits of Palme-tree pleasantest to thirst
And hunger both.
P. L. VIII. 212.

6. Jericho
The city of Palms.
P. R. II. 21.
7. Those just Spirits that wear victorious Palms.
Sol. Mus. 14.
8. Palmie hillock.
P. L. IV. 254.

It is not easy to identify Milton's Palm. It was not known in England in his day as a living plant, but he had probably seen it in South Europe. Yet if he had observed it he could scarcely have called it branching. The Palm or Date Tree can scarcely be said to have branches at all, certainly less so than any other large tree; and his description of the fruit (No. 5) will scarcely fit the Date. Still, I suppose he did mean the Date Palm. The "Victorious Palme" he borrowed from Horace and other Classical writers.

PANSY.

1. Pansies and Violets and Asphodel.
P. L. IX. 1040.
2. Of Pancies, Pinks, and gaudy Daffadils.
Comus, 867.
3. The White Pink and the Pansie streak'd with jeat.
Lycidas, 144.

PINE.

1. His spear—to equal which the tallest Pine,
Hewn on Norwegian hills to be the mast
Of some great Ammiral, were but a wand.
P. L. I. 292.
2. Cedar, and Pine, and Firr, and branching Palm.
P. L. IV. 139.
3. Of Stateliest Covert, Cedar, Pine or Palme.
P. L. IX. 435.
4. The Gummie bark of Firr or Pine.
P. L. X. 1076.
5. Pine or monumental Oke.
Il Penseroso, 135.
6. Forrest Oaks or Mountain Pines.
P. L. I. 613.
7. Tore up by the roots Thessalian Pines.
P. L. II. 544.
8. Wave your tops, ye Pines.
P. L. V. 193.
9. A Mountain half sunk with all his Pines.
P. L. VI. 198.
10. Cover me, ye Pines!
P. L. IX. 1088.
11. Among these Pines His Voice I heard.
P. L. XI. 821.
12. The Vext Wilderness whose tallest Pines.
P. R. IV. 416.
13. Under the spreading favour of these Pines.
Comus, 184.

See Fir.

PINK.

1. The White Pink and the Pansie.
Lycidas, 144.
2. Of Pancies, Pinks, and gaudy Daffadils.
Comus, 867.

POPLAR.

- From haunted Spring and Dale
Edg'd with Poplar pale.
Od. Nat. 185.

PRIMROSE.

1. Bring the rathe Primrose that forsaken dies.
Lycidas, 142.
2. Soft silken Primrose fading timelessly.
Od. f. Inf. 2.
3. The yellow Cowslip and the pale Primrose.
Odes: May Morning, 4.

The connection of sadness with the rathe Primrose sounds strange to us, but it was the fashion in Milton's day, handed down to him from the older poets, especially Speuser and Shakespeare. But it passed away very soon after his death and became for us the beautiful and joyous herald of Spring.
H. N. Ellacombe.
(To be continued.)

The Week's Work.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq.,
Castleford, Chepstow, Gloucestershire.

EPIPHRONITIS VEITCHII is a hybrid between *Epidendrum radicans* and *Sophranitis grandiflora*, and with a few brilliant exceptions it is rarely seen in a healthy condition. It is best described as a small edition of *E. radicans*, for in habit it is very similar. Unfortunately it develops the spot disease in many districts, and it is difficult to find just the right place where it will thrive, but a light and fairly dry position in the intermediate house would in the majority of instances be likely to give the best results. A low temperature with a moist atmosphere is detrimental to the well-being of this plant, and as much air as possible should be admitted at all times. Several growths may be placed in a pot or pan, which must be filled one-third of its depth with drainage, and the compost should be made up of *Osmunda* fibre and *Sphagnum*-moss. Make this very firm, and keep the growth in position by a few thin stakes. Other *Epidendrum* hybrids include *Epi-cattleya matutina* and *Epi-laelia Charlesworthii*, but many of them never make really decorative plants. They require the same treatment as the parents, but frequent propagation is needed to maintain healthy stocks.

GENERAL REMARKS.—All plants that are growing freely and are well rooted must be afforded plenty of water and never be allowed to become dry at the base, but those that are weak, and have in consequence made little root, should only be given water when the compost is fairly dry. Winter-flowering *Cypripediums* repotted last February are now making headway, and should receive encouragement to make luxuriant growth. This may be brought about by an ample supply of moisture, both at the root and in the atmosphere, while all insect pests must be destroyed. *Cymbidiums*, *Cattleyas*, the Mexican *Laelias*, and, in fact, any other plant that is making its season's growth must be treated generously and assisted in every way to build up strong pseudo-bulbs, capable of producing stout flower-scapes. *Calanthes* up to the present time have not been watered very liberally, and they have rooted freely into the soil. From now until the foliage begins to decay they must not be allowed to suffer from dryness, and where the loam was not of the best, alternate waterings with weak liquid cow manure will be beneficial. Do not stage the plants thickly.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of
LINLITHGOW, Hopetoun, South Queensferry, N.B.

CUCUMBERS.—Plants intended for autumn fruiting should now be planted out, but if the necessary space is not available, very useful crops can be obtained by growing the plants in 10-inch pots. The pots should be stood on large turves, and the plants grown in a house where a good command of heat can be maintained. Water must be applied cautiously for a time, and ventilation given only moderately on fine days.

PEACHES.—The present is a suitable time to note trees that have failed to perfect their crops, or any that are showing signs of exhaustion. In the majority of cases the mischief will be found to be at the roots, and these must be examined some time before the leaves begin to fall. With established trees it may only be necessary to open a trench 6 or 8 feet from the stem, and carefully work under the tree with a fork for a short distance in search of strong tap roots. When these have been cut away, and before filling in the trench, it will be advisable to ram some lime rubble under the tree, which will ensure better drainage and prevent the roots getting into the subsoil, afterwards filling in the trench with a mixture consisting of good loam, lime rubble

and a little charcoal, firming this well as the work proceeds. In the case of young, vigorous trees it may be necessary to lift these out altogether, being careful to retain as much soil about the roots as possible. Before replacing the trees trim any damaged roots with a sharp knife, and shorten those strong ones that have made root-pruning necessary. Examine the drainage, and should this be at fault it must be put right before replanting. Should the soil have become sour, it will be as well to have this renewed entirely. The trees should be lifted while the leaves adhere to the wood, and the operation must be performed with every care possible. Choose a dull day, and have everything in readiness, so that no delay may arise when once the work has commenced. Shade the roots with damp mats during the short time they are out of the ground. As advised for older trees, see that the drainage is in perfect order, and in replanting carefully fill in the trench with the mixture already mentioned, spreading out the roots in layers, and making the soil firm as the work proceeds. After planting, the trees should receive a good soaking of tepid water, and to ensure a speedy recovery from the check lightly spray the foliage with clear water and shade the trees by hanging up a mat in front, keeping it clear of the foliage. Continue to syringe the trees twice daily in fine weather, and keep the house moderately close until the trees recover from the check.

LATE PEACHES IN UNHEATED HOUSES.

Trees now ripening their fruits require very careful ventilation, and should a period of dull weather set in the house should be kept fairly close during the day, opening the top and bottom ventilators at night to cause a free circulation of air. See that the border is kept sufficiently moist, and syringe the trees in bright weather. Expose the fruits to the sun's rays, and do not hesitate to thin out the shoots where there is the least suspicion of overcrowding.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORT, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

ROSES.—As soon as Climbing and Rambler Roses pass out of bloom they require a certain amount of pruning in order to admit light and air, and to encourage extra vigour in the wood that will flower next year. A drastic pruning is not now advisable; but merely the cutting back of weak, lateral flowering wood, and shortening the stronger growths; whilst any old main shoots may be removed to the base. Vigorous shoots coming from the base must be carefully looped up out of harm's way. Some of the *Wichuraianas* will give a sprinkling of bloom later, but the best variety for autumn blooming is *Trier Multiflora*, a strong growing pillar Rose, that blooms well in September and October. Others which promise to be valuable as late bloomers are *Moonlight*, *Galatea*, *Danæe*, and *Ceres*. An occasional application of manure water at this season will benefit all climbing Roses.

COLCHICUM.—By planting bulbs of *Colchicum autumnale* and its varieties now and at intervals of a week or so to the middle of September, a bright display of bloom will be obtained from a few weeks hence to November. They do well in sandy loam, but are not very particular as to soil. The bulbs should be set about 3 inches deep. *Colchicums* lend themselves well for naturalising in grass, the latter forming a suitable setting for the flower-spikes which precede the foliage. They may be grouped informally under tall, deciduous trees where the sunlight is not much obstructed; on sunny banks, or in patches in the rock-garden. There is also much to be said in favour of planting them to cover bare patches of soil beneath tall trees in the wild garden, where the foliage of the *Colchicums* produces a pleasing effect in its various stages.

HARDY CYCLAMEN.—Corms of autumn and spring-flowering varieties of hardy *Cyclamen* may be planted, the former without delay, but the latter at any time from now to October. In suitable positions, such as any part of the wild

garden where partial shade and thorough drainage are provided; sloping banks under trees, or shady parts of the rock-garden, *Cyclamen* when once established give very little trouble. Soil of a porous nature, such as a mixture of leaf-mould, grit, sand, and old mortar rubble, is essential. When planting, surround the corms with sand, after which give a good watering, and if the weather be dry, slightly cover the corms with a layer of moss or Coconut fibre. They will require sufficient protection during the first winter to prevent frost lifting them; dry leaves make a suitable covering. Varieties mostly grown are *C. Coum*, *C. Atkinsii*, *C. ibericum*, and *C. europæum*.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME,
Warter Priory, Yorkshire.

BOUVARDIA.—To have *Bouvardias* forward enough for blooming in the autumn it is necessary to have plants that were rooted early. The larger the plants grow, provided the shoots are proportionately strong, the more flowers they will bear, and the longer they will continue in bloom. Any very late-struck plants should be potted at once; 5 or 6-inch pots will be large enough, as the time in which they have to grow is not long. As advised for the earlier-struck plants, give them rich soil, composed of turfy loam, with about one-third of rotted manure, leaf-mould, and sand. If proper attention has been paid to stopping the shoots the plants should have enough by this time, as a moderate number of stout shoots is preferable to a larger number of weaker ones. Push the plants forward by giving careful attention to syringing, and closing the frames early in the afternoon, which will yet do much to bring these late plants to a useful size. When pushed on in this way it is necessary to keep the plants closer to the glass than when grown in cooler conditions. Prevent any overcrowding of earlier rooted plants, and now that the pots are full of roots, liquid manure or other stimulants may be given twice a week. When the weather is very bright *Bouvardias* require a thin shade during the middle of the day.

PRIMULA SINENSIS.—Late-sown seedlings of single and semi-double Chinese *Primulas* which have been pricked into boxes will now have made sufficient growth to require potting. It is not well to allow them to remain too long in the boxes, as in that case the plants suffer a severe check when they come to be moved. They should now be put into the pots in which they will bloom, in a potting compost of turfy loam, rotted manure, leaf-mould and sand. Pots 5 or 6 inches in diameter will be large enough, for if well cared for and assisted later with manure water the plants can be grown as large and strong in these pots as it is necessary to have them. Stand them in a cool pit close to the glass; admit air in the day time, and shade lightly when the weather is bright. Draw off the lights at night when there is no danger of heavy rains, for exposure in this way to the dew and moist night air will greatly benefit the plants.

DOUBLE PRIMULAS.—Plants that were raised from side-shoots early in the summer and are now well rooted should be moved into larger pots, using soil similar to that recommended for single varieties. Pot the plants well down in the pots; many think that low potting tends to aggravate the liability of double *Primulas* to damp off at the collar. Provided the watering is done carefully, fairly low potting is, on the contrary, the best means of preventing trouble of this kind. Grow them as sturdily as possible by keeping them near the glass during the summer, and in winter expose them fully to the light and keep them in an intermediate temperature.

HIPEASTRUM.—Plants of *Amaryllis* that were started early will have completed their growth. Let nothing be left undone to assist the plants which flowered later in getting their leaves well matured. Use a thin shade when the weather is bright, and give plenty of air with enough water to keep the roots healthy. A good washing with the syringe from time to time with the object of keeping the leaves free from red spider will be well rewarded.

FRENCH TULIPS.—Where these plants are required to flower early the bulbs should be potted at once, as it is necessary they should have enough time to form plenty of roots before any attempt is made to force them. Six-inch pots are large enough for all purposes. Where large quantities are grown they may be placed in shallow boxes. Fresh loam mixed with sand in proportion to the more or less heavy nature of the loam will be found suitable. After potting, an open place out-of-doors is the best position for them; they should be stood on a layer of ashes to prevent the ingress of worms, and they ought to be covered with about 4 inches of the same material. Allow them to remain until the soil is fairly full of roots, when they may be forced in moderate heat.

THE HARDY FRUIT GARDEN.

By W. HENLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

FRUIT TREES ON WALLS.—Many of the instructions given during the past month will still apply to the management of wall trees. Apricots are ripening, and should be exposed to the sun. Keep the leading shoots closely laid in and all foreright shoots stopped. Peaches and Nectarines that have made strong shoots this season will require full exposure to the sun to get the wood properly ripened and the buds matured. Remove all growths not required for bearing next year, particularly the gross shoots, where they can be spared, and the weaker ones, of average fruiting size, kept thin and closely nailed or tied in. If mildew should make its appearance dust the affected shoots, especially the tips, with flowers of sulphur. Protect Morello Cherries from the birds, and gather all fruit as it becomes ripe.

BUSH FRUIT.—The present is a good time to mark or destroy any bushes of an inferior kind. If this is left undone until the fruit is gone, and the leaves are off, mistakes are likely to be made. Keep the surface of the ground frequently hoed among all bushes, especially those which have been attacked by the caterpillar. Past experience proves that where the ground is kept clean and frequently stirred between the bushes the less likelihood there is of attacks by that pest. Avoid planting anything permanent or herbaceous near the bushes; in fact, have nothing about them that will prevent the soil being stirred frequently.

FRUIT ROOM.—If not already done, the first favourable opportunity should be taken for putting everything in this department in readiness for the storage of fruit. Cleanse every part of the structure inside, by washing, linewashing and freely ventilating for several days, before the storage of any kind of fruit is attempted. There must be no mustiness of the interior or the fruit will become tainted and quickly decay. A cool, dry atmosphere is essential.

GENERAL REMARKS.—The selection of all kinds of trees required for autumn planting should now be decided upon, and it would be wise to select those varieties that succeed best in the particular district or soil. It is desirable to plant new varieties in a plot of ground where they can remain for three or four years, during which period it will be seen whether or not they are likely to succeed in the district. Bush and pyramid trees are adaptable to this trial treatment, the subsequent removal causing them to fruit earlier than if allowed to remain undisturbed at the root. Trees devoid of fibrous roots take years to become fruitful, hence those with an undue proportion of large, coarse roots should be rejected. This remark applies to Apples, Pears, and Plums.

THE "FRENCH" GARDEN.

By P. AQUINAS.

OLD MANURE BEDS.—The autumn crops, such as Celery, Carrots and Cauliflowers, are now well established on these beds. Carrots are thinned out repeatedly till each plant has sufficient space to develop a strong and healthy foliage. Catch crops sown or planted among the Celery will be removed before they impede

the growth of the main crop. The bleaching of the earliest batch of Celery has begun. A dressing of quick-acting patent manure and a heavy watering was first given, after which the Celery is covered with mats for a period not exceeding three weeks. In dull weather it may be necessary to remove the mats at regular intervals to prevent decay in the Celery.

OPEN-AIR CROPS.—The Tomato crop promises well this season. The plants were stopped in the middle of July; the majority had only then three trusses showing. The bottom truss, and in many cases the second one, is fully grown, and a spell of fine weather will ripen them. The plants were grown in frames till early in June; when they were transplanted in the open the first truss was setting fruits, and now they are earlier than we ever had them in the open. Owing to the scarcity of labour many growers have this year sown the spring batch of Cabbages directly in their final quarters, and the departure has proved a success owing to the damp weather. This crop is disregarded in some districts on account of the disease known as black leg. It may be stated that plants reared in ground free from it will not be attacked after the final planting, while contaminated seedlings are not cured by being removed to clean ground.

CROPS UNDER GLASS.—Cucumbers in frames are now producing fine specimens. Ventilation is regulated according to the outside temperature, but all lights are closed at night from the end of August onwards. Vegetable Marrows and Kidney Beans grown in cold frames have been marketed at excellent prices, especially when one considers the cost of production is solely a matter of labour. It has proved again that crops grown under temporary shelter, so as to mature three or four weeks earlier than the bulk from the open, are more remunerative than those grown expensively to come on the market at a more out-of-season date, and the risks of losses are no bigger than with those grown in the open. The last lot of Kidney Beans for October and November is growing rapidly.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

WINTER SPINACH.—Make a good sowing of Winter Spinach on this date, and another sowing a week later, choosing moderately rich ground protected from east winds. Sow the seeds in shallow drills drawn at 18 inches apart, and when the plants are well through the surface carefully thin them to prevent damping taking place in winter. Slugs must be destroyed by frequent light dustings of soot and lime. Keep the hoe at work between the rows.

TURNIPS.—This crop should also be sown with as little delay as possible. Thin the seedlings to 9 inches apart as soon as they are large enough to handle; dust them frequently with soot and wood ashes, and do everything possible to promote free growth. Model White, Red Globe, and Green Top Stone are good varieties for present sowing.

CELERY.—The early plantations of Celery will require frequent attention with regard to watering up the plants. Choose a time when the foliage is quite dry, and remove all decaying foliage before tying the leaves together. The soil should be broken up finely and placed carefully round the plants with the hand, applying only a small quantity at one time.

BASIL.—If this herb is in demand during the winter, this is the best time to sow the seeds. Sow thinly in boxes or pans, and place these later in a temperature of 60°. When the young plants are large enough they should be pricked into 6-inch pots, putting four plants in each pot, and growing them in a cool pit. A temperature of 60° will suit them well throughout the winter.

CUCUMBERS IN UNHEATED PITS.—Extra care will be necessary for the remainder of the season to prevent Cucumber plants in frames becoming attacked with mildew. Keep the foliage thinned out so that light may reach all parts of the bed. The syringe may be lightly applied early on sunny days, but the foliage should become dry again before closing time. Any water that is necessary at the roots should also be applied early in the

day. Weak liquid manure may be applied weekly if necessary to promote free growth.

WINTER ONIONS.—The sowing of Onion seeds with a view to producing bulbs in May should take place at once. Select rich soil, and sow the seeds in shallow drills 15 inches apart. As soon as the seedlings are through the surface apply the Dutch hoe for the destruction of weeds.

LETTUCE.—Continue to prick out young Lettuce plants on warm borders in order to produce a supply throughout October. Make further sowings of Maximum, Stanstead Park, and Hardy White Cos. These plants may prove valuable throughout November.

CHEVIL.—This plant is easily raised from seed, providing the weather is moist and cool. Seeds should be sown now for a crop in October, and a month later for plants to stand the winter.

COLEWORTS.—Continue to plant Coleworts as the plants become large enough, allowing one foot between each plant each way after this date. As soon as growth commences hoe the ground carefully.

LEeks.—These may still be planted for use during the spring. Select rich ground, and allow 10 inches between the plants in the rows. Plants which have become established should be watered freely with liquid manure, and the ground between the rows carefully broken up with a hoe.

CHICORY.—The latest batch of Chicory should be carefully thinned to 9 inches apart. A good dusting of lime and soot will keep slugs in check, and act as a stimulant to the plants.

THE APIARY.

By CHLORIS.

THE QUEEN FOR THE HEATHER STOCK.—In most parts of the country apiarists will be considering the advisability of removing their best colonies to the Heather. If the queen put forth her utmost during the fruit bloom season, there is every reason to suppose that she will not be suitable to head a stock for the Heather, as she will be exhausted. This also applies to districts where the White Clover has been a heavy crop. The strain upon the queen is not usually realised by the casual beekeeper. During the time that the honey flow is greatest the queen's attendants feed her on stimulating predigested food to cause her to deposit as many eggs as possible, but as the honey flow decreases the attendants, realising that less effort is required, feed her on less rich food, and so egg-laying is reduced, and the queen is compelled to seek her own food in a crude state; but the attendants seem to urge her to consume large quantities when the need for progeny is greatest, because bees at this season only live six to eight weeks. If queens of proved fecundity have been raised earlier in the season they should be used to supersede the old queens.

INTRODUCING THE NEW QUEEN.—Remove the old queen, carefully examine the combs to make certain there are no queen cells and adopt one of the following methods:—(a) Use the smoker to make the bees gorge themselves with honey, remove the hive to a quiet part of the garden (during the early evening), take out the frames, one by one, shake off the bees on a sheet on which a skep is resting propped up on a brick to make an enlarged entrance. When the bees cannot be removed easily by a sharp shake, then they may be brushed off with a stout quill. Remove the hive to its old stand, place a board in front, covered with a sheet, shake the bees out of the skep, and place the new queen among them, and it is rare that they will reject her. (b) Remove the queen as before, and examine for queen cells. In the evening, just before dark, liberate the new young queen on the alighting board, allowing her to run in, and take care to cause no alarm. In all likelihood the colony will accept their new sovereign. It is often wise to strengthen all stocks with driven bees before taking them to the Heather. The colonies must be strong to be successful.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, Wellington Street, Covent Garden, W.C. **Editors and Publisher.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the **PUBLISHER**; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the **EDITORS**. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUGUST 17—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "The Mustard Beetle," by Mr. Frederick Enock.)
THURSDAY, AUGUST 19—
Manchester and N. of Eng. Orchid Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 61.9.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: **Thursday, August 12** (10 a.m.): Bar. 29.5. Temp. 68°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, THURSDAY—
Great trade sales of Dutch Bulbs, by Protheroe and Morris, at 67 and 68, Cheapside, E.C., at 10 o'clock.

Radium and Plant Growth.

The present position of our knowledge with respect to the influence of radium on plant growth deserves to be stated in order that those gardeners with Athenian mind—ever seeking for some new thing—may exercise caution before investing seriously in this latest kind of artificial manure. That position put briefly amounts to this, that there is no well-authenticated and controlled experiment which demonstrates that radium, either by its rays or its emanations, exercises a beneficial effect on plant growth. Nor is it surprising that our knowledge should linger in this uncertain state, for on the one hand radium and its ores give off no fewer than three kinds of rays, each with its special properties, and they give off also what, in the slipshod language of the day, are known as emanations. The effect of each of these agents may, for all we know, be beneficial, detrimental or nil. Until, therefore, these effects have been established it is impossible to recommend gardeners to invest in the various nostrums which are being put on the market under the magic of the name of radium.

Some of these materials have their virtues fortified by admixture with artificial manures—phosphates and the like. They may, therefore, be expected to produce beneficial effects, and hence to persuade the uncritical that an elixir of plant life has at last been discovered. Before they become persuaded such people would do well to try a simple test. Let them expend as many pence on a good artificial manure as their radium elixir costs them shillings, and having done so study the

effects of the two materials on the growth of their plants. We venture to predict that the result will convince them that the purchase of radium ores or radium fertilisers is not at present a profitable investment. It may well be that many virtues hitherto unsuspected lie in the use of radium, but until those virtues are discovered the man who gardens for profit will do well to rely on the more num-drum virtues of farmyard and artificial manures, and to leave to the professional experimenters the investigations of the effects of radium rays and emanations on the growth of plants.

In the meantime Mr. Martin H. F. Sutton has carried out this year at Reading certain experiments with radio-active ores on Tomatos, Potatos, Lettuces, Radishes, Marrows, Beets, Carrots, Onions and certain flowering plants. One of these experiments affecting the germination of seeds has already produced results of considerable interest.

It should be stated that Mr. Sutton's experiments last year showed that when radio-active ores were mixed with the soil the germination of Rape seed was accelerated.

This year a small experiment was made



FIG. 35.—A AND C, RAPE EXPOSED TO GAMMA RAYS. B. RAPE NOT EXPOSED TO THE RAYS.

to see the effects on Rape seed when the radio-active ore was enclosed in glass bottles and inserted in the box. Three large flat boxes, each 3 feet square and 6 inches deep, were filled with plain garden soil and stood in a row, at a distance of about 15 yards from each other, and were sown with Rape seed.

One box was plain, as control. Another box had a bottle in the centre containing about one-fourth-thousandth of a milligramme of radium bromide. The other box had two bottles, one at each of two corners, each bottle containing about one-fourth-thousandth of a milligramme.

The seeds were sown on May 31.

At 9.30 a.m. on June 4 the seedlings in the control box looked as though they would be the earliest, but by 4.50 p.m. on the same day the boxes containing the bottles of radio-active ores were much more advanced than the control, the box containing the two bottles being the strongest. Up till June 11 the two boxes with ore continued to be stronger and better than the control, but it was impossible to say that one of these was better than the other. Further, the growth of the plants nearest the bottles was not appreciably different to that in other parts of the boxes.

By June 17 the control had overtaken the two containing ore, and was

healthy and vigorous, whilst the other two began to show signs of giving up, and by July 10 the contrast was extraordinary, as is shown by fig. 35. On taking up some of the plants it was not found that there was any excessive root-development.

Mr. Sutton, therefore, regards the experiment as appearing to prove that the gamma rays have a distinctly noxious or inhibiting effect on plant growth.

THE WAR HORTICULTURAL RELIEF FUND: RELIEF FOR SERBIA.—In accordance with the recommendation of Mr. HENMAN (see p. 68), the society's special commissioner to Serbia, the council of the Royal Horticultural Society decided at its last meeting to send out to Serbia seeds to the value of £500. The order for the seeds was placed with Messrs. HURST AND SON, and, thanks to the personal interest which Mr. EDWARD SHERWOOD has taken in the scheme for relief, the total of seeds to be sent, as will be seen from the following list, is a very considerable one. The seeds were sent out by a boat belonging to the Johnstone Line on August 8, and consigned to the President of the Co-operative Union in Serbia. This gentleman has given strict undertaking to see that the ship is met by a trustworthy agent at Salonika, and to use the resources of the Co-operative Union for the impartial and thorough distribution among

the small Serbian farmers. It is largely owing to the energetic action of Mr. ARTHUR SUTTON, Rev. W. WILKS, and other members of the sub-committee appointed to deal with the immediate needs of Serbia, that the task of discovering exactly what the needs were and of contributing towards their satisfaction has been discharged so promptly. When it is remembered that the needs of our allies—for example, Belgium—are even greater, there is good hope that the appeal of the R.H.S. for contributions to the Allies War Horticultural Relief Fund will continue to meet with an increasing measure of support. Subscriptions, large or small, to this fund may be sent to the Treasurer, R.H.S., Vincent Square, S.W., or to the Editors of the *Gardeners' Chronicle*.

LIST OF SEEDS SENT TO SERBIA.

25 cwt. Mangel Long Red	25 lbs. Cauliflower Walcheren
10 " " Yellow Intermediate	25 " " Autumn Giant
10 " " Yellow Globe	50 lbs. Carrot Nantes
10 lbs. Pea Bountiful	50 " " St. Valery
10 " " Pilot	50 lbs. Kohl Rabi Fine Top
10 " " Essex Star	Green
10 " " Fillbasket	2 cwt. Spinach Long-standing Prickly
10 " " Senator	2 cwt. Onion White Spanish
10 " " Alderman	1 " " Flat White Tripoli
10 " " Ne Plus Ultra	1 cwt. Leek Flag
60 lbs. Broccoli Purple	2 cwt. Kale Thousand-headed
25 " " Self-Protecting	1 cwt. Beet Turnip-rooted
15 " " Late Queen	2 cwt. Turnip Green Globe
10 lbs. Brussels Sprouts	1 " " Fosterton Hybrid
25 lbs. Cabbage Off-in-ham	4 cwt. Onion Giant Rocca
25 " " Rainham	13 qrs. Wheat
25 " " Leeds	6 qrs. Barley
25 " " Market	10 qrs. Oats
25 " " Enfield	6 cwt. Red Clover
50 " " Small Drumhead	4 cwt. Lucerne
50 " " Large Drumhead	5 cwt. Ryegrass Italian
	6 cwt. Winter Tares
	1 cwt. Spinach Rect
	6 cwt. Perennial Ryegrass

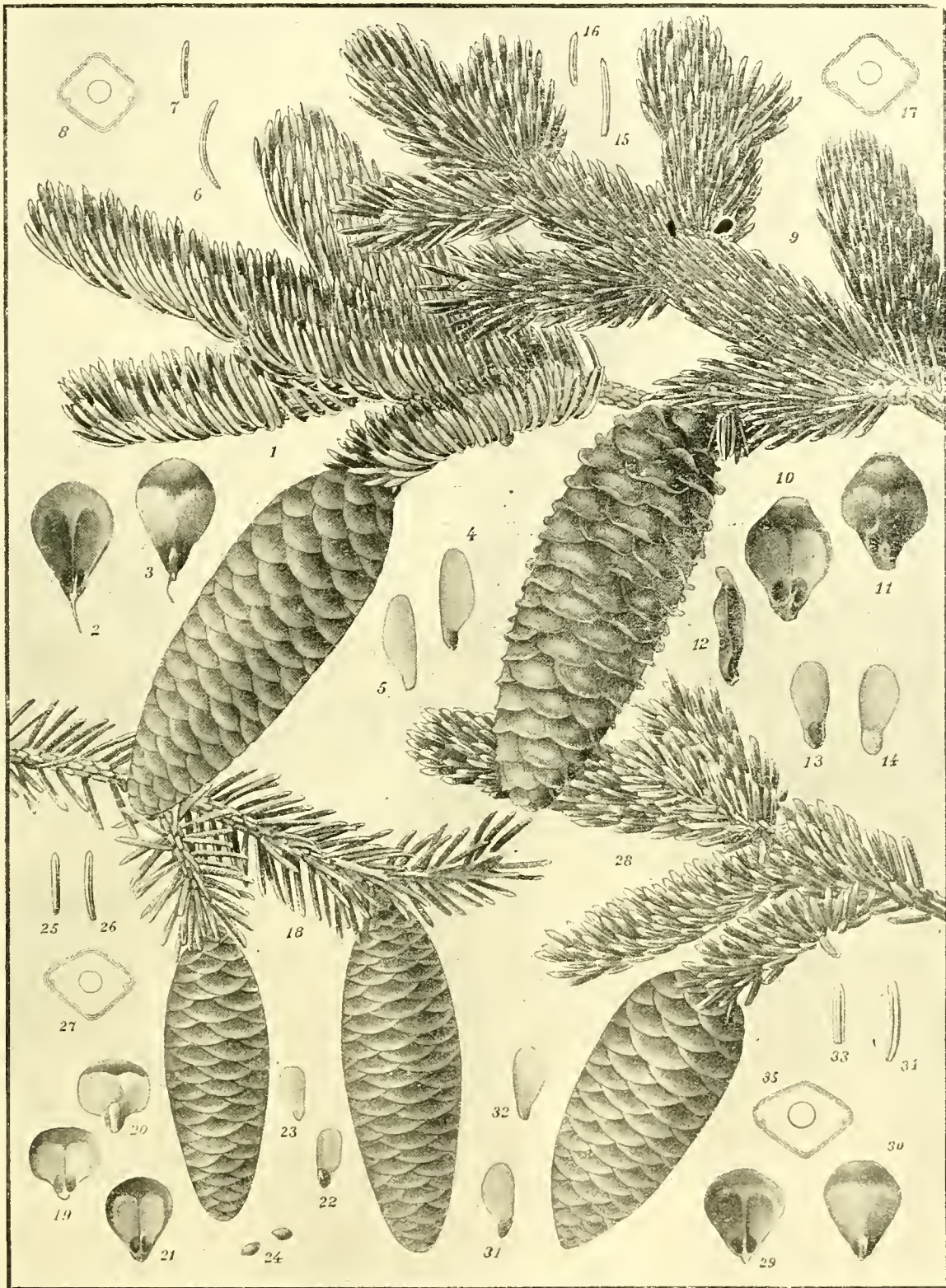


FIG. 36.—JAPANESE SPECIES OF PICEA (see p. 98).

1-8, *PICEA BICOLOR* MAYR VAR. *ACICULARIS*—1, Branch with mature cone; 2, 3, Inner and outer sides of scale; 4, 5, Inner and outer sides of seed; 6, 7, Leaves; 8, Cross section of leaf (magnified). 9-17, *PICEA BICOLOR* MAYR VAR. *REFLEXA*—9, Branch with mature cone; 10, 11, Inner and outer sides of scale; 12, Lateral view of scale; 13, 14, Inner and outer sides of seed; 15, 16, Leaves of different shape; 17, Cross section of leaf (magnified). 18-27, *PICEA MAXIMOWICZII*—18, Branch with mature cones; 19, 20, Inner and outer sides of scale; 21, Scales of different shapes; 22, 23, 24, Seeds; 25, 26, Leaves; 27, Cross section of leaf (magnified). 28-35, *PICEA KOYAMAI*—28, Branch with mature cone; 29, 30, Inner and outer sides of scale; 31, 32, Inner and outer sides of seed; 33, 34, Leaves of different shape; 35, Cross section of leaf (magnified).

THE R.H.S. FRUIT AND VEGETABLE COMMITTEE.—In addition to the exhibits noticed last week, the following collections of fruit were staged at the R.H.S. meeting which took place on the 3rd inst.:—Messrs. S. SPOONER AND SONS, Hounslow, exhibited a collection of Apples and a dish of very highly coloured Strawberry-Raspberries. Such Apples as Early Red Margaret, Devonshire Quarrenden, Worcester Pearmain, Gladstone, and Beauty of Bath were finely coloured. The green-skinned varieties included clean and well-shaped fruits of Early Rivers, Stirling Castle, Grenadier, and Lord Suffield. (Silver Banksian Medal.) A collection of excellent Apples grown in New Zealand, and collected from the Cromwell Development Co. and the Otago Expansion League, was sent by Messrs. ADOLPH MORITZSON AND CO., of Dunedin, and exhibited by the High Commissioner of New Zealand, 15, Victoria Street, S.W. The **TOKIN'S TRUSTEES OF TRELISKE ORCHARD**, Ettrick, contributed the following varieties:—Cleopatra, Delicious, Esopus Spitzenberg, Jonathan, Monro's Favourite, Rome Beauty, Scarlet Nonpareil, and Sturmer Pippin. The **UPPER CLUTHA ASSOCIATION**, Cromwell, sent Ballarat Seedling, Cleopatra, Jonathan, Lord Wolseley, Scarlet Nonpareil, and Sturmer Pippin; and from Mr. ALBERT BIRCH, Birchdale Orchard, Teviot, came Cleopatra and Esopus Spitzenberg. A Silver-Gilt Banksian Medal was awarded to the collection, which attracted considerable attention. The Hon. VICARY GIBBS, Aldenham House, Elstree, Herts, (gr. E. Beckett, V.M.H.), was awarded a Silver Banksian Medal for his collection of Cherries.

ROYAL AGRICULTURAL SOCIETY'S SHOW AT MANCHESTER, 1916.—The attention of those interested in fruit growing and fruit preserving is directed to the competition arranged by the Royal Agricultural Society of England for bottled fruits and vegetables in connection with their show, to be held at Manchester in June, 1916. Prizes are offered both to amateurs who bottle fruits and vegetables for their own use and not specially for the purposes of sale, and to "fruit preservers," who bottle the fruit for the purposes of sale only. Particulars can be obtained from the Secretary, 16, Bedford Square, London, W.C.

WAR ITEM.—Orchidists will be interested to hear news of M. CHAS. MARON, the well-known raiser of Orchids of Brunoy, Seine et Oise, France, who has officiated with many of them at the international exhibitions both in England and on the Continent. M. MARON writes that all the male members of his family are away on active service. Assistance in the Orchid houses being difficult to get, he is almost alone and can only do the most important work. Nevertheless says the plants do not seem much the worse for the lack of attention. He has some specially interesting things which he is looking forward to flowering in the autumn, notably crosses between *Brasso-Cattleya Orpheus* and *Cattleya Warscewiczii alba*, and other crosses of the pure white *C. Warscewiczii*.

BIRMINGHAM PUBLIC PARKS.—A correspondent writes us as follows respecting the annual inspection day of the Birmingham public parks, which function took place in the third week of July:—"The inspection was more than usually interesting to the public this year owing to the fact that during the past year a new development has taken place at the Lightwoods Park. The walled kitchen garden there has been converted to represent an old English, or more correctly, perhaps, a "Shakespeare" garden. This additional attraction at Lightwoods will, no doubt, be fully appreciated by the great poet's devotees as much as by the garden-loving community, and although the time has been too short to get together a representative collection of the plants enumerated by SHAKESPEARE,

there is nevertheless a considerable nucleus, and the chairman of the Parks Committee, Councillor JOHNSON, and Mr. W. H. MORTER, the chief officer of parks, may be trusted to see to it that the collection will be quickly increased. A central rustic pergola, with cross sections, already fairly gay with Roses, forms an imposing feature, and the garden, though so new, affords a luxuriant display of the older subjects of our English gardens. The number of public parks in Birmingham is now 82, comprising no fewer than 1,600 acres.

PUBLIC PARK FOR CORSTORPHINE.—Through the generosity of Mr. DOUGLAS BROWN, the community of Corstorphine has become possessed of a public park, to be called the St. Margaret's Park. It has been attractively laid out at the expense of the donor, who will also make provision for its future upkeep, through the Parish Council, in whose custody it will be vested. The opening ceremony took place on July 31. When completed the park will extend to about 8½ acres.

ROSE "RED LETTER DAY."—We are asked by *White Rose* to say that, in his article on new single Roses, printed on page 79, he was in error in attributing the raising of the variety Red Letter Day to Messrs. HUGH DICKSON, LTD. He should have stated that the raisers were Messrs. ALEXANDER DICKSON AND SONS, LTD.

A NEW DIERVILLA.—Among the plants brought from Korea a few years ago to the Arnold Arboretum, U.S.A., by Mr. JACK is a form of *Diervilla florida* which has been named *var. venusta*. This is one of the handsomest of all *Diervillas* and one of the earliest to flower. It is very vigorous, and every year completely covers itself, before the leaves are half-grown, with large rosy pink flowers. Few of the shrubs introduced by the Arboretum in recent years give greater promise of usefulness and popularity in northern gardens.

BANANA JUICE FOR SNAKE-POISONING.—In the *South African Journal of Science* Mr. F. W. FITZSIMONS states that in view of the large number of cases of recovery from snake-venom poisoning which have been attributed to the use of Banana juice, he conducted a series of experiments but failed to obtain any antidotal effect. His experiments were tried on various animals, in which he injected the venom of such deadly reptiles as the cobra and the puff-adder, and he administered a dose of the alleged antidote before, after or simultaneously with the poison. In explanation, Mr. FITZSIMONS says that fully 60 per cent. of the victims of snake bite recover without any treatment. A snake bite is not always accompanied by venom. At the first dart the reptile may miss its aim and discharge the poison harmlessly, so that if at a second attempt a few moments later the fangs are driven home little or no poison would be injected into the wound.

THE GARDENS OF LILLE.—Lille, the great industrial town of northern France, which has been for so many months shut off from communication with the outer world, possesses several fine parks and public promenades. These promenades and gardens have been laid out since 1860, at which date the work of extending the zone of fortifications was begun. The designs for laying out the ground were entrusted to M. BARILLET-DESCHAMPS, then head gardener of Paris, but his plans were regarded as too ambitious and were rejected. The present gardens and walks cover some 80 or 90 acres. The Jardin Bauban, about eight acres in extent, is the most beautiful, and is the favourite rendezvous of the Lillois. Visitors who know the town will recall the fine squares—Daubenton, Ramponneau, and Faidherbe, and particularly the garden and palace of Rameau, which Lille owes to the generosity of M. CH. RAMEAU, the great amateur of horticulture, who left 400,000 francs in 1875 for the building of a home for the Society of Horticulture and the creation of a park. The buildings

of the palace comprise a fine exhibition hall, with committee rooms and offices annexed, and a large greenhouse, in which are fine specimens of Palm. The garden "De la Citadelle" has an extent of 15 acres, and is known as the Bois de Boulogne. It was made in 1865, and the school garden for fruit cultivation three years later. The existing Botanic Garden is the descendant of the herb garden (jardin medical), created in 1644 by PIERRE RICARD, the celebrated Lille physician and botanist. Of the boulevards and walks, one of the best is the Allées de l'Esplanade, planted with Limes, which date from before 1749, and Chestnuts planted in 1756. An excellent account of the gardens of Lille is to be found in a work of M. SAINT-LEGER, from which many of the above details have been taken.

LIQUID MANURE.—The value of liquid manure as a stimulant to the growth of crops is appreciated by all gardeners, but the reasons why it has this value are less generally understood. These reasons are, however, simple and twofold. In the first place liquid manure, unlike dung, which is poor in that element, is rich in potash. This is a matter of great importance at the present time, since the supply of kainit is no longer available. The present dearth of potash manures makes it important for gardeners to pay more attention than ever to the collection, burning and use of hedge clippings and the like. Unless some such steps are taken we may expect the yield from our gardens—particularly on light land poor in potash—to show a considerable falling off. In the second place both the nitrogen and the potash contained in liquid manure are in a readily available form. Unlike the nitrogen in dung, which requires to be worked down by bacteria into the form of nitrates before it can be absorbed by the roots of plants, the nitrogen in liquid manure is in forms which are immediately or almost immediately available. Hence the rapidity with which the results of feeding plants with liquid manure makes itself evident. Needless to say, the material should not be allowed to stand long before it is used—indeed the sooner the drainings from stable and byre can be distributed to the land, the better it is for the crops. It should be remembered that liquid manure is very poor in phosphates, so that a small quantity of some quick-acting phosphatic manure should be added together or alternately with the liquid manure.

IRISH KELP INDUSTRY.—The Twenty-second Report of the Congested Districts Board for Ireland, recently issued, gives some particulars of the Irish kelp-making industry. It appears that the rise in the price of kelp which was mentioned in the previous report has been maintained. This increase, it is stated, was necessary if the Scottish and English manufacturers of iodine and its by-products desire to procure supplies of kelp from the west of Ireland, as the price of the fused or charred seaweed known as kelp had sunk to a rate that no longer encouraged the collectors and burners of seaweed to continue to pursue one of the most laborious occupations conceivable, at which the clothes of the workers are generally soaked in sea-water or rain, or in both. The seaweed is snatched from the shore during a storm, or in some places during calm weather it is torn with long rakes from the bottom of the sea where there are rocky shoals. The tearing of the seaweed from the bottom of the sea is carried out at considerable risk by crews in open boats, and a fair price is certainly due to the men and women engaged in the task. When the harvest of particular kinds of seaweed is gathered, it has to be turned and dried like hay until it is dry enough for burning in trenches dug in the ground above high-water mark. The buyers of the kelp complain, and often justly we fear, that, when the seaweed is in a molten state, sand and stones are sometimes mixed with it in order to increase its weight, as kelp is bought

by the ton. All real friends of the kelp-burners urge them to abandon any such method of adulteration, as the purchasers, who make a careful chemical analysis at the time of purchase, find out whether the kelp has been adulterated, and if they find stones, gravel or sand in the clinker of burned seaweed, a lower price all round is not unnaturally fixed by them so as to protect themselves from the fraud that is uselessly attempted. A new method was tried a few years ago of burning the seaweed to ashes instead of clinker. The kelp buyers do not, however, at most parts of the coast, wish the new method to be continued, as the ashes have to be put in bags and are more liable to injury from the weather.

JAPANESE METHOD OF PROTECTING FRUIT.

—The Japanese growers adopt a system of bagging their fruits as a preventive against injury by insects and fungi. According to Mr. T. IKEDA, in *Fruit Culture in Japan*, the fruit, after the final thinning, is covered with small bags made of old newspapers or of mino-gami, a strong Japanese paper. The bags are provided with fine holes in the corners to let out rain-water and to prevent breaking. Bags without bottoms are preferred by some. In South Japan, where Peaches, Pears and Grapes are largely grown, bottomless bags made of newspaper are widely used. Near Tokio growers use another kind of bag, made with native paper treated with the Kaki-Shibu, a juice expressed from Kaki fruits. The juice makes the paper water-tight, and from its anti-septic quality is extensively used for many purposes. The paper bags are removed at the harvest. In the large centres of orchard fruits between Tokio and Yokohama the work is done several days prior to the harvest, in order to bring out the full colours of the fruits. The mouth of the bag is closed on covering, so as to keep out the enemies, and tied with twine such as that of Rinsui (*Scirpus triquetus*, L.), or young leaves of Schuo (*Trachycarpus excelsus*, Wendl.), or with fine zinc or copper wires. Bagging is mainly practised on Peaches, Pears and Apples.

THE GENUS EUCALYPTUS.—Part XXII. of Mr. MAIDEN'S *Revision of Eucalyptus* treats of *E. erythronema*, *E. acaciaeformis*, *E. pallidifolia*, *E. caesia*, *E. tetraptera*, *E. Forrestiana*, *E. miniota* and *E. phoenicea*, bringing the number of species described and figured up to 124. *E. tetraptera* is a very striking western species with a strong, four-winged seed-vessel between 2 and 3 inches in diameter. Like the very large-fruited *E. pyriformis* and *E. macrocarpa*, it is only of shrubby dimensions.

THE LABIATÆ OF CHINA.—Among herbaceous plants the labiate family occupy a prominent position in the flora of China. FORBES and HEMSLEY'S *Enumeration* (1890) includes upwards of 150 species belonging to forty genera, among them are two new genera and about thirty new species, mostly from Professor A. HENRY'S rich collections from the Central and Western Provinces. Mr. S. T. DUNN now contributes* a key to the genera and species hitherto discovered in China. DUNN'S "key" increases the number of genera to fifty-three with many new species. Compared with shrubs and trees, the herbaceous element of the Chinese flora is poorly represented in gardens; yet, judging mainly from herbarium specimens, there are many highly ornamental plants among it awaiting introduction. We do not forget *Primula*, *Meconopsis*, and some other genera which have been among the special objects of collectors. Of course, many plants of promising appearance in the dried condition fail to satisfy the cultivator, and disappointments are more frequent, perhaps, with herbaceous plants than with woody species. Such familiar genera as *Plectranthus*, *Coleus*, *Teucrium*, *Scutellaria* and

Dracocephalum are numerous represented by more or less ornamental species. It may be useful to add that Mr. DUNN reduces a large number of species which he considers as spurious. For example, he cites no fewer than ten names for *Salvia japonica*, without distinguishing varieties. On the contrary, he recognises seven varieties of *Dracocephalum urticifolium*, several of which have been described as species by other botanists, and nine varieties of the common *Calamintha Clinopodium*. It should be mentioned that the "key" does not quite finish in this number of the *Notes*.

PUBLICATIONS RECEIVED.—*The Study of Plants: An Introduction to Botany and Plant Ecology*. By T. W. Woodhead. (Oxford: The Clarendon Press.) Price 5s. 6d.—*The Loquat*. By I. J. Condit. (Bulletin No. 250, issued by the Agricultural Experiment Station, Berkeley, California.)—*Uses of Vegetables, Fruits and Honey*. (Bulletin 184, Ontario Department of Agriculture, Toronto.)—*Annual Report of the Bee-Keepers' Association of the Province of Ontario, 1914*.—*Edwards: The Confessions of a Jobbing Gardener*. By Barry Pain. (London: T. Werner Laurie, Ltd.) Price 1s.

CONFESSIONS OF A NOVICE.

A DISTINGUISHED Frenchman once observed in my hearing that Nature is so successful in the production of beautiful things because she takes care to hide all her failures by converting them into fossils. I have myself heard of gardeners who follow Nature in this respect, and whose gardens never show sign of failure because the unsatisfactory things are cast into the fire at the first sign of their default. This is by no means the case in my garden, for since I have no reputation to lose I am able to contemplate with affectionate interest the pathetic failures which I have encompassed. Among them, and not the least interesting, are my "war vegetables" sown last August. Some of the Cabbage tribe have withstood the winter and the spring, and now, at the turn of the year, are quite as healthy and at least as large as when they were put in about a year ago. They represent survivors in a severe struggle and I have discovered that in that struggle they have grown two separate sets of roots. The first were cut off by the attack of a root-maggot, which rings the stem underground, depriving the top of its nutriment, and turning the leaves a curious bluish colour. The gardener is quite cheerful on the subject of this attack, and assures me that if on another occasion we put a little salt on their tails—or rather around the base of the stem—all will be well. I, however, have put my foot down, and have insisted on trying the expedient recommended by the Americans of putting round the collar a tarred disc of card-board. This elegant barrier is said to be all-sufficient for the reason that the eggs are laid on the upper part of the plant and the larvae migrate to the roots by crawling down the stem. Meeting the postcard their nefarious course is diverted and on reaching the soil they find themselves so far from the main root that their energies are exhausted, and they die before arriving at their destination.

It is not, however, of these Cabbage maggots that I had intended to write. When I go into my garden I find myself by a healthy instinct about the time of the dinner gong in the vegetable quarter, so I expect my confessions will reveal that I am as loyal to and as inexperienced in food gardening as in flower gardening. It was of the accidental successes, so dear because so undeserved, that I had intended to write. Of these I can boast this year more than a fair share. They were concentrated in what is called, because of the large pieces of stone in it, the rock garden. They began with the Candytuft which formed masses

of the purest white, concealing earth and foliage, and making the double *Arabis* by its side a drab and grey thing. The expert was patently annoyed—of the same ill-mastered annoyance as is manifest by the adversary when you hole a long putt. He explained to me carefully that this triumph was due to my ignorance in planting the Candytuft in the most barren soil of my garden. I have reflected on that somewhat caustic comment, and feel sure that it was just, and hence I am now engaged in collecting plants which—like the ideal bicycle—will stand a reasonable share of neglect. After the Candytuft came the grey-leaved white *Cerastium*, no less like a great snowdrift, and now with the *Cerastium* bent down by my Irish terrier, who prefers this mat to any other whereon to bask in the sun, a white *Sedum*—perhaps *S. album*—disputes in floriferousness. The *Sedum* is perhaps at its best in the gravel path. All are most evidently members of that section of plants which has reduced abstemiousness to a habit, and shuns nitrogen as a vegetarian eschews steak. These are the plants on which the novice should rely, for with them he can get a little even with the proud gardener with whose much-manured, profusely-phosphated *Delphiniums* he may not compete. I shall be very grateful if any of my brother novices who have discovered other garden plants which thrive by fasting will tell me of them. My botanist friend assures me that science has had its eye on these vegetable Dr. Tanners for a long time, but I sometimes distrust science: it is so apt to be wise after the event. A. N.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See *Tables, Supplement, Gard. Chron.*, July 24, 1915.)

(Continued from page 82.)

3. ENGLAND, E.

SUFFOLK.—Owing to late frosts and north-east winds, succeeded by hot dry weather, the fruit crops are not extra good. During almost the whole of May the wind was north to east. Frosts were experienced on June 19 and 20, varying from 2° to 6°. No rain was recorded here from May 19 to June 25. Gooseberry bushes are yielding small fruits, but of excellent quality. To show the remarkably cold periods during the past six months, I append the following mean temperatures:—January, 34.79°; February, 35.84°; March, 38.09°; April, 43.73°; May, 50.72°; June, 58.75°. A. K. Turner, *Orwell Park Gardens, Ipswich*.

—Plums are a failure in the open, but there are a few on walls. Peaches and Nectarines are carrying average crops, but Apricots are almost a failure. Strawberries mulched with straw litter from the stables have withstood the drought, but without the early mulching on our light, sandy soil they would have suffered badly. William Low, *Euston Hall Gardens, Thetford*.

4. MIDLAND COUNTIES.

BEDFORDSHIRE.—The Apple crop is a very heavy one, but owing to the long drought the fruits are small. We had a severe hailstorm here on July 4, when I picked up several hailstones weighing over 2 ounces each, of flattened egg shape, and one of them measured 4½ by 2½. The storm did much damage to the fruit, the ground under some of the trees being covered with fallen fruits, and the majority of those left on the trees were damaged. There was a poor crop of early Strawberries, but of the late varieties Givon's Late Prolific and Laxton's Cropper there were excellent crops. W. H. Neild, *Woburn Experimental Fruit Farm, Ridgmont, Aspley Guise*.

—Strawberries were adversely affected by the dry season of last year, many two-year-

* *Notes from the Royal Botanic Garden, Edinburgh*, No. xxviii., June, 1915.

old plants being blind. Frost and drought further reduced the crops this spring. Apples and Pears gave splendid shows of blossom, but the east winds and frosts caused many fruits to drop. On June 20 we registered 7° of frost. It has been a very dry and inclement spring. *Messrs. Laxton Bros., Bedford.*

— There was every prospect of remarkably good fruit crops, the trees, with the exception of Apricots, flowering well; but owing to late frosts a very large number of the fruits fell after they had set. Apples are suffering badly from blight. The soil here is heavy and cold, the situation being rather a low one. *Thos. W. Stanton, Hinwick Hall Gardens, Wellingborough.*

BUCKINGHAMSHIRE.—On the whole the fruit crops are good, but Apples and Plums have suffered from aphids. Early Strawberries were injured by frost during the last week in May, and were small owing to drought, but late varieties benefited from the rainfall in June. The soil is sandy loam on a gravel sub-soil. *Wm. Willcocks, Langley Park Gardens, Slough.*

— This is a disappointing season for fruit in general; only trees growing in sheltered positions, or trained against walls, are carrying anything approaching average crops. The late spring frosts destroyed the greater part of the Apple, Pear, Plum, Gooseberry, Currant and Strawberry bloom. Strawberries were almost a complete failure, owing to frost and drought. Most orchard trees are badly infested with aphids and mildew. Our soil is a heavy, retentive loam resting on clay, and the natural drainage is bad. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

— In the spring there was every indication of a good fruit year, but we had very late frosts, one occurring on June 19, and these destroyed much of the blossom, especially of Strawberries and Gooseberries. A long spell of dry weather prevented the fruit from swelling. The soil here is of a light, stony nature. *William Brooks, Missenden House Gardens, Amersham.*

— The fruit crops in South Buckinghamshire, with the exception of Strawberries, are very good. Frosts during the blossoming period ruined the Strawberry crop in all low-lying districts, and the prolonged drought in June shortened the season. Apples are plentiful, nearly all varieties carrying average crops. Cox's Orange Pippin being especially promising. Of Pears and Plums there are bountiful crops and the fruits are clean and of good size. Cherries are plentiful and of good quality. Apricots are scarce, and do not succeed well in this district. All bush fruits are carrying heavy crops of good fruit. *Chas. Page, Dropmore Gardens, Maidenhead.*

CHESHIRE.—Our soil being of rather a light texture, the late drought seriously affected most fruit-bearing trees and plants. The rain at the end of June (1.20 in seven days) was very beneficial to the late Strawberries. The fruit crops are generally up to the average. *Alfred N. Jones, Marbury Hall Gardens, Northwich.*

— The drought has caused the fruits to be small, and late frosts destroyed much bloom of Apples, Gooseberries and Currants, but Pears escaped. I am inclined to think the absence of bees, which has been general throughout this district through the Isle of Wight disease, has also contributed to the bloom being unfertile. I do not know of a single hive of bees with the exception of one or two that have been brought lately into the neighbourhood, and these show signs of the disease. Black Currant trees affected by the mite are entirely barren. They bloomed well, but did not set, whereas trees alongside free of mite are loaded with fine fruit. Although on light soil, we have never failed to have a good crop of this fruit. We are situated on the red sandstone, but are

sheltered from north-east winds. *Leon Squibbs, Bidston Court Gardens, Birkenhead.*

— There was a good show of blossom on nearly every kind of fruit tree, and the fruits set well. During the long period of drought, however, in May and June, the crops suffered. Rain on June 25 and since has done much in the way of compensation, and there is every prospect of good fruit crops generally. The soil is a light, sandy loam resting on clay. *Charles Flack, Cholmondeley Castle Gardens, Malpas.*

— The fruit crops this year in these gardens are below the average, owing to late frosts and the prolonged drought. The trees are also suffering from insect pests, and owing to a reduced staff we have not been able to use remedial measures. Aphids, red spider, Apple blossom weevil and American blight are particularly in evidence. The gardens are surrounded with forest trees, on which it would be almost impossible to find a leaf perfectly developed owing to the ravages of insects. This makes it the more difficult to keep the fruit trees clean. Very old Apple trees are fruiting much better than younger specimens. *T. A. Summerfield, Alderley Park Gardens, Chelford.*

— The following varieties of Apples are carrying good crops:—Lord Suffield, Keswick Codlin, Grenadier, Mère de Ménage, and Cellini. Of Pears, most trees are yielding crops under the average, but Beurré Diel and Beurré Bosc are fairly plentiful. Plums are scarce. Raspberries are plentiful, and Gooseberries are up to the average, all trees being free from caterpillars. *James Atkinson, Torkington Lodge Gardens, Hazel Grove, Stockport.*

— Plum trees blossomed profusely, and promised good crops, but late frosts did much damage. Cherries suffered severely during the stoning period from the effects of the six weeks' drought. The first flowers to open on the early varieties of Strawberries were destroyed by later frosts, and the drought delayed and lessened the crops. *William Wingfield, Doddington Gardens, Nantwich.*

DERBYSHIRE.—Trees set their fruits well but owing to the dry weather during May and June many young fruits fell, this applying especially to Cherries and Plums. There are abundant crops of small fruits, especially of Raspberries and Loganberries. Strawberries were poor, the drought during last August and September hindered the growth of the plants, and that of April and May ruined the crop, which is the worst I have seen for years. Our soil is a good deep-yellow marl, very suitable for fruit culture. *John Marfield, Darley Abbey Gardens, Derby.*

— Up to June 23 the fruit prospects were very promising, but the severe frost on that date seriously injured many fruits. We covered our Strawberries and Potatoes with straw with good results, but tender varieties of Apples and Plums were badly injured by 10° of frost. *J. H. Goodacre, Elvaston Castle Gardens, Derby.*

— The fruit crops promise to be up to the average. The late frost did very little damage, and the drought had no serious effect on the crops generally. This may be accounted for by the fact that our land is heavy, and the sub-soil clay. *F. G. Mills, Laneside Home Farm, Glossop.*

HERTFORDSHIRE.—Although Apple trees are dropping quantities of fruit, there will be a large crop of average quality. All fruits, with the exception of Cherries, are very clean. Although Cherries are bad with us, I hear favourable reports from various places in the neighbourhood. The long drought from May 17 till June 27 ruined the early Strawberries, and watering seemed to have but little effect on them. The later varieties benefited from the rain on June 27. Our soil is of a heavy

retentive loam. *Thomas Nutting, Childwickbury Gardens, St. Albans.*

— The Plum crop is an average one, the varieties Early Rivers, the Czar, and Belle de Louvain carrying good crops, and Victoria and Monarch being up to the average. Very many Apples are dropping on account of the drought. Of Pears, the varieties Conference and Fertility have very good crops. *Thos. Rivers and Son, Sawbridgeworth.*

— The fruit crops are up to the average. Early in the season there was every prospect of exceptional yields, the trees flowering profusely. Frosts caused some damage, but the greatest trouble, especially where spraying was not employed, has been the aphid pest; the Apple trees in many cases having the appearance of being scorched. Consequently the fruit has set badly, and very much of it is malformed and very small. Pears are clean and healthy, and plums, both on the walls and standards, are clean and promise well. Cherries on walls, both sweet varieties and Morellos, were especially good. Gooseberries are plentiful, but all kinds of Currants have been badly infested with aphids. Strawberries suffered severely from frost, and owing to the continued drought the season was a short one. The soil here is stiff London clay. *Edwin Beckett, Aldenham House Gardens, Elstree.*

— The season opened with every prospect of good fruit crops, but shortage of labour prevented the usual winter dressings being given, and consequently pests are numerous. The lackey moth grub has been most destructive on Apples and Pears; Silver-leaf is prevalent on Plums, and Blister is present on the Peach and Nectarine trees. Our soil is very heavy, overlying the London clay, and is not well drained. *E. F. Hazelton, North Mymms Gardens, Hatfield.*

— The fruit crops, with the exception of Plums and Strawberries, are good. These two fruits were completely ruined by late frosts and drought. The Strawberry crop was the poorest I have ever known. *F. Fitch, Balls Park Gardens, Hertford.*

LEICESTERSHIRE.—The fruit crops in this district are satisfactory. Apple trees are yielding excellent crops, with the exception of Dumelow's Seedling. The drought from May 13 to June 25 adversely affected the Strawberry crops. Black Currant blossoms were destroyed by the north-east winds. The rains of July 3 and 4 have been most beneficial to fruit crops and vegetation, 3.51 in. being registered. *D. Roberts, Prestwold Gardens, Loughborough.*

— The Apple crop promises to be one of the best on record. Although the weather was cold, with north or north-east winds, during the flowering period we had very little frost and plenty of bright sunshine and a dry atmosphere. A few trees which bore heavily last year have not set a full crop. Plums on walls have a fair supply of fruit, but on standards there are very few, and this applies to Damsons also; but large crops were carried last year. Cherries are doing exceptionally well, but the Morellos shed more fruit than usual during the recent drought. Apricots are plentiful and of good quality. Strawberries were plentiful, but the berries were not quite so large as is usual, owing to the dry weather. We registered only 0.35 in. of rain in the 43 days, May 14 to June 25. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

— Most fruit crops are satisfactory, but Raspberries were damaged by frost, 6° and 4° being registered on June 19 and 21 respectively. The soil here varies from light with gravelly sub-soil to loamy with clay sub-soil. In our district we suffer from late spring frosts, owing to the low situation of the land. *W. Patterson, Swithland Hall Gardens, Loughborough.*

(To be continued.)

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XL).

NOUVELLES DE BELGIQUE.

Les Allemands ayant dû, conformément à la convention de La Haye, organiser l'administration de la Belgique, l'enseignement horticole aux adultes a été donné d'une façon à peu près régulière. Les conseillers d'horticulture restés au pays établissent en ce moment les propositions de cours et conférences pour la saison 1915-1916.

L'école dominicale d'horticulture de Louvain, qui était l'une des mieux fréquentées du pays, n'a pu être ouverte faute de personnel enseignant. Parmi ce dernier, M. Verbelen est prisonnier de guerre en Hollande et M. Van Wijngaerden a dû se réfugier en Angleterre. L'école d'Aerschot n'a pu fonctionner pour le même motif.

A Vilvorde, les cours de l'école d'horticulture de l'Etat ont repris depuis novembre. Il manque encore deux professeurs, outre M. Ambroise qui a été fusillé avec son frère à Onhaye, et non à Waremmé, ainsi que nous l'avions rapporté. Le nombre d'élèves est de quarante environ. Avant la guerre, un projet prévoyant une extension importante du matériel de culture avait été approuvé par le Ministre de l'Agriculture et partiellement mis en exécution. Depuis la réouverture de l'école, le personnel a pu continuer de s'occuper de ces extensions : il y a actuellement sept cents "éénruiters" (châssis à verre unique) et on dispose des fonds nécessaires pour en construire trois cents nouveaux de même qu'un "warenhuis" (serre à compartiments, du type hollandais) de sept cents mètres carrés.

Il y a journalièrement, de Vilvorde, deux trains dans la direction de Bruxelles et deux dans la direction d'Anvers. Les fabriques de conserves de Malines, Louvain et Wespelaar fonctionnent. On confirme que cette dernière a fortement souffert lors des destructions opérées par les Allemands à la suite des combats contre les troupes de la place d'Anvers.

Le temps en Belgique a été très sec pendant longtemps, mais récemment les pluies ont été très abondantes.

Au marché de Bruxelles les cours ci dessous étaient faits vers le 20 juillet :—

	En 1915. Francs.	En 1914. Francs.
Champignons ...	2.60 à 3.40 le kilo	1.60 à 2
Pois ...	0.25 à 0.30 le kilo	0.20 à 0.30
Choux-fleurs ...	20 à 30 le cent ...	10 à 32
Concombres ...	30 à 50 le cent ...	14 à 18
Melons ...	2 à 3 pièce ...	2 à 4
Framboises ...	0.20 à 0.50 le kilo	0.20 à 0.25
Groseilles rouges	0.36 à 0.40 le kilo	0.20 à 0.28
Cassis ...	0.35 à 0.46 le kilo	0.30 à 0.40
Cerises ...	0.35 à 0.50 le kilo	0.26 à 0.40

Il résulte de ce tableau que les fruits moux ont été légèrement plus chers qu'en 1914, ce qui s'explique par la demande de ces produits pour la préparation des confitures à usage si répandu dans les armées. Les prix n'atteignent cependant pas les niveaux auxquels ils sont arrivés dans d'autres pays.

Vers le 20 juillet également, les Poireaux faisaient 0 fr. 10 à 0 fr. 20 la botte, les Oignons (jeunes) 0 fr. 25, les Laitues 2 à 3 fr. le cent, les Haricots 0 fr. 60 à 0 fr. 80 le kilo, les Artichauts 0 fr. 50 à 0 fr. 60 pièce. Aucun produit d'origine française n'a été écoulé à Bruxelles.

Pour les fruits de serre, les cours sont irréguliers. Le 17 juillet, le beau Raisin, noir et blanc, a atteint le prix de 2 fr. 60 le kilo. On s'attend toujours à une ruée folle pour le mois de septembre, toute la production non forcée

devenant disponible alors. Les Pêches ont été abondantes ce mois. Aux Halles des Producteurs on en comptait jusqu'à trente bacs par jour, puis brusquement sept ou huit seulement, et alors les prix étaient satisfaisants. Les belles Tomates trouvaient acquéreur à 0 fr. 60 ou 0 fr. 70 le kilo.

FAUT-IL DÉBAPTISER ?

A DIVERSES reprises nous avons ici même fait allusion au mouvement créé dans les milieux horticoles des pays belligérants en vue de la suppression, des catalogues, des variétés portant un nom ennemi. Dans les pays alliés, on a proposé de ne plus mettre en vente les variétés allemandes ordinaires et de débaptiser celles qui présentent une réelle valeur. Des propositions analogues ont été faites en Allemagne pour les obtentions françaises et anglaises, tandis qu'en pays neutre on proteste avec véhémence contre tout changement, attendu qu'il en résulterait une complication inouïe dans les transactions horticoles.

La question a été soulevée à la Société Nationale d'Horticulture de France et le comité de la section des Roses fait connaître son opinion dans une lettre à la Société des Amis des Roses, de Lyon, qui avait vivement appuyé le mouvement contre les dénominations allemandes :—

Nous inspirant de l'heureuse initiative du groupe Lyonnais des roséristes et du fait que Paris avait été désigné pour la tenue du congrès des roséristes empêché par la guerre, nous avons cru opportun, pour l'avancement des décisions à prendre en vue de la rédaction des futurs catalogues de Roses, d'élaborer un travail provisoire concernant :

1° Le maintien sous certaines conditions de noms de Roses d'obtention allemande ou autrichienne ayant des qualités ou une notoriété commerciale ;

2° Le changement de nom de certaines variétés de même origine ou d'obtention en France, chez nos alliés ou les neutres, mais présentant des appellations trop allemandes ;

3° Une liste de variétés de ces origines diverses pour laquelle la suppression dans nos catalogues nationaux nous a été proposée, mais au sujet desquelles nous pensons qu'il doit y avoir étude ultérieure de la question.

Les variétés allemandes-autrichiennes ou à appellation de tournure trop allemande devraient être exclues de nos catalogues, à moins de changement de leur nom par leurs obtenteurs français, alliés ou neutres, ou insérés dans la section III, si on leur reconnaissait une valeur suffisante.

Des roséristes des régions parisienne et orléanaise réunis à l'occasion du concours de Bagatelle se sont adressés au Comité des Roses de la Société nationale d'Horticulture de France pour lui signaler l'avantage d'une prompte étude de cette question délicate, par notre collaboration aux travaux de l'importante région lyonnaise si bien représentée au sein de la Société des Amis des Roses.

Notre travail préliminaire est apporté par nous comme une contribution aux notes et travaux communiqués à votre Société. A celle-ci, croyons-nous, revient le soin de porter le résultat de son travail aux Sociétés qui s'occupent de la Rose chez nos alliés et chez les neutres, et de porter la proposition du changement des noms trop allemands des Roses à leurs obtenteurs, si ces Roses doivent continuer à figurer sur les catalogues français.

NOUVELLES DIVERSES.

FRUITS BELGES POUR L'ALLEMAGNE.—Le traité de commerce conclu le 22 juin 1904 entre l'Allemagne et la Belgique accordait les exemptions et réductions de droits prévues par le tarif conventionnel allemand, aux fruits de provenance belge désignés au n° 47 du tarif douanier allemand, c'est-à-dire aux fruits suivants : Pommes, Poires, Coings, Abricots, Pêches, Prunes de tout genre, Cerises, Griottes, Nêles, fruits d'églantier, Prunelles et tous les autres fruits à noyau et pépins, Fraises, Framboises, Groseilles, Groseilles à maquereau, Mûres sauvages, Myrtilles, Baies de Sureau, Airelles rouges, Baies de Genévrier et toutes les autres baies comestibles. Le traité de commerce entre l'Allemagne et la Belgique étant mis hors de vigueur par suite de la guerre, les fruits de provenance belge devraient être soumis aux droits du tarif général allemand, qui sont plus élevés, mais un arrêté allemand en date du 1er juillet stipule que provisoirement ces fruits d'origine belge seront admis en Allemagne au tarif de faveur établi avant la guerre.

NOUVELLES DE LA GUERRE.—M. Jean Guilmont, caporal d'infanterie, neveu de M. Bouché, le président de la Société française des Roséristes, a été tué à Beauséjour, à l'âge de 21 ans. M. Etienne Fanton, jardinier au Fleuriste municipal, actuellement lieutenant au 27e d'infanterie s'est distingué au front et a été porté à l'ordre de l'armée.

PRODUITS HORTICOLES ET CHANGE.—*L'Echo de Paris* apprend que les maraîchers hollandais qui vendent leurs légumes à des marchands allemands ont refusé d'accepter des billets de banque malgré la prime élevée de 20 pour cent qu'on leur offrait. Ils exigèrent le paiement en or. Comme il fut impossible de leur donner satisfaction, ils remportèrent leurs légumes.

LÉGUMES ET CONTREBANDE DE GUERRE.—A diverses reprises du matériel de guerre a été découvert dans des envois de légumes destinés à l'Allemagne. Voilà que le même procédé est employé pour exploiter les populations restées en Belgique. Le beurre y est à un prix très élevé et la falsification à l'aide de margarine est revenue en honneur. De Maestricht, des quantités de margarine destinées à être mélangées au beurre étaient expédiées sur Liège, cachées sous des légumes. Le pot aux Roses a été découvert et le *XXe Siècle* annonce que différents marchands de "légumes" viennent d'être condamnés par le tribunal de Liège.

KORT OVERZICHT VOOR DE VLAMINGEN.

De Tuinbouwschool van Vilvoorden is geopend met een veertigtal leerlingen. De leeraar Ambroise werd in 't begin van den oorlog inderdaad doodgeschoten, doch te Onhaye en niet te Borgworm.

De Zondagscholen van Leuven en Aarschot konden niet heringericht worden bij gebrek aan het noodige personeel.

Er komt ons eene lijst toe met prijzen te Brussel in Juli voor fruit en groenten gemaakt. Deze zijn een weinig hooger dan verleden jaar. Bessen bereikten echter de koersen niet die in andere landen gemaakt werden.

In de Nationale Tuinbouw-Maatschappij van Frankrijk werd de vraag van het verwijderen der deutsche plantennamen opgeworpen. Het staat vast dat de welbekende rozen van Duitschen oorsprong niet zullen herdoopt worden.

De Duitschers passen opnieuw de laagste invoerrechten toe op het Belgisch fruit.

HOME CORRESPONDENCE.

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

PEACH GROWING SEVENTY YEARS AGO (see p. 67).—You do well to call attention to this subject by quoting the commonsense instructions given so long ago. The late Mr. Wildsmith forty years ago at Heckfield gave some of the best lessons in successful Peach culture, both under glass and on the open walls. If such practice was more widely followed now we should see better results. The greatest mistake made by present-day growers is that of pruning the trees at the wrong time. Too many defer this detail until the time arrives to train the trees preparatory to starting them into fresh growth. It dis-budding of the shoots is properly done when these are but 2 inches long little pruning is afterwards necessary. We are apt to allow too many shoots to remain, as a consequence overcrowding is the result. Instead of removing the useless growths, even after the fruit is gathered, it is allowed to remain until the leaves have fallen, on the plea that it is difficult to see what shoots should be retained. The result is too often ill-ripened growth, resulting in shedding of the buds before they develop blossom. A skilful practitioner can tell at a glance how many shoots are required to fill a certain space, and he should promptly remove surplus growths. In this way the remaining shoots would be exposed to the light and air; they would mature naturally and swell their buds in such a manner that if root moisture is provided there is no fear of bud-dropping in autumn and spring. E.

LATE-PLANTED ROSES.—It is a good plan to cut tolerably hard back newly planted Roses of the climbing section. I know quite well the value of such practice, but to test the matter further with special regard to late planted Roses, I transferred in the latter part of April plants of such varieties as Mrs. Walsh, Snowdon and Climbing Mrs. Cutbush from one part of the garden to another site, carefully lifting them from the site which they had occupied one season with as much soil attached to the roots as possible. After planting they were well watered, the shoots 6 feet or more long were tied to supports intact, not one of them had even the point shortened. Unfortunately for the trees less than a quarter of an inch of rain fell for the next month. Growth was slow, although the shoots pushed freely from the nodes the whole length of the shoots at first, they afterwards came to a standstill, when they were 3 inches long, and there they remain. The plant of Mrs. Cutbush, which had previously made growth 7 feet high, refused to show signs of growth, although watered repeatedly and syringed daily. In the middle of June I cut this plant down to within 8 inches of its base, when new growth commenced to push at once; it is 2 feet long. The trial proves the wisdom of cutting back newly-planted Roses to within, say, 1 foot of the base or even lower. M.

CHELIDONIUM FRANKENIANUM.—In last week's issue, p. 89, Sir Herbert Maxwell described a plant under this name which is evidently intended for *C. Franchetianum*. This is a well-known plant, and the description given by your correspondent agrees with it. *C. Franchetianum* was not in cultivation at Kew when the 1895 list (not 1893) was printed, but is included in the 1902 *Hand-list*. It is a Chinese plant, also known as *Glaucium lactuoides*. W. L., Kew.

BELGIAN EXPORTS TO THE UNITED STATES (see p. 84).—Our Association, fully sympathising with our Belgian friends, memorialised the Government and received the same reply as that sent to the Worshipful Company of Gardeners, and I believe several influential persons also joined in the movement. Chas. E. Pearson, Secretary, Horticultural Trades' Association of Great Britain and Ireland.

ORCHIS HIRCINA.—In reply to Mr. E. Brock's query in your last number (see p. 77) respecting *Orchis hircina*, if he refers to *Knorrledge*, Vol. XXXV., No. 528 July, 1912, he will

find that Mr. E. J. Bedford records his find of this plant in the Cuckmere district, Eastbourne, 1911, and mentions his belief that a specimen was found in West Sussex in 1907. He gives some good photographs with his article. I find this *Orchis* easy to cultivate in pots in a cool house, and it shows better tuber increase than many European *Orchids*. I have planted twelve and transplanted fifteen after two years' growth. They might possibly be reinstated as a common British plant by any dweller on the chalk who took the trouble to grow and sow them. Last year I fertilised 316 of the flowers, which formed good seed-pods and ripened; there are no seedlings up yet. This plant, like many other British *Orchids* (*Ophrys apifera*, *Orchis Morio* and *Orchis pyramidalis*), comes above ground ten, nine and eight months before flowering, according to seasons, and makes its chance of forming new tubers very dependent on hard frosts, but they are all very difficult to kill. Richard F. Burton, Langnor Hall, Salop.

—Mr. F. Brock's discovery of this rare plant near Goodwood was indeed an interesting one, for it is, I believe, the second only found in Sussex, the other being in 1909 near Boxley. The plant was first recorded in England in 1641, and until 1858 was fairly well known in Kent. From 1858 until 1898 it was believed to be extinct in our country. That year a specimen, to everyone's delight, was rediscovered on the Wye downs in Kent. It has since been recorded from near Guildford, in Surrey, and several times in Kent. On the Continent the plant is not uncommon. In Italy I have found an enormous number of specimens of all sizes, near Florence. W. Herbert Cox.

LIME SPRAY FOR FRUIT TREES.—A *Southern Grower* asks others to give their experience, I may say that I have utilised lime exclusively for a number of years past. Before other insecticides came into use lime was the principal wash used for spraying fruit trees. The great objection to the use of lime was the glaring whiteness of the trees, and to overcome this I blacken the lime with soot. The bag containing the soot is immersed in water for three days previous to being used. Lime and soot certainly cleanse the trees of lichen, scale, and other pests. It should not be sprayed on in too thin a state. I find it best at about the consistency of a thick cream. It should be strained twice through coarse sacking before use. D. D. Robertson, Ashridge Gardens, Berkhamsted.

—In reply to *Southern Grower*, I may say that for several years I have used hard Buxton lime for spraying Apple trees at the rate of 50 lbs. to 40 gallons of water, and it is not of the slightest use in preventing an aphid attack. I have used it at various periods when the buds were "cracking" from the clusters, and even when the trees were in full bloom, and all with the same result. Last season I finished spraying Lord Grosvenor on April 15, when the buds were well advanced. I find no difficulty in getting the lime to adhere to the trees; in fact, there is plenty of it on the branches at the present time. I have used salt with it, but see no advantage in that. If the lime is of the right sort—hard—and it boils well when mixed and is put on hot, I find no difficulty in getting it to adhere, no matter what the weather is at the time. Naturally I should not apply it during heavy rains, but a slight drizzle does not matter. Lime-spraying cleanses the trees of moss and lichen, and many insect pests. We are never troubled with winter moth caterpillar, yet we never use grease bands. The present year is the worst for aphid I ever knew. Many of the trees of Worcester Pearmain, Lady Sudeley and Lord Grosvenor have not a healthy leaf on them, they look as though they had passed through a fire. The crop is an immense one, "scrumps" of course, and although only the size of small Walnuts they are colouring and falling off. I wish all would fall! Such a check to growth cannot fail to have a serious effect on the trees next season. Trees vigorously sprayed, too, with various washes are equally bad. Bramley's Seedling for the first time has suffered severely. Cox's Orange Pippin, Mère de Ménage and

Warner's King have not suffered to the same extent. Plums are particularly healthy, whether it was the spraying or not I cannot say; certainly the sprayed trees are free from fly, whilst some nearby that escaped spraying are affected with the pest. I experimented with a tree of Merryweather Damson by spraying with lime when fully in blossom; the lime did not affect the "set" of fruit in the slightest. I note some Damson trees not sprayed at all are much crippled in the leaf. E. Molyneux, Swanmore Park, Hants.

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

AUGUST 4.—Present: Mr. E. A. Bowles, M.A. (in the chair); Messrs. W. Fawcett, J. Fraser, J. T. Bennett-Poë, W. Hales, F. J. Cbittenden (hon. sec.), and Mr. Grove (visitor).

Leaf-cutting Bee.—Mr. J. FRASER showed leaves of *Laburnum* from which pieces had been cut by the leaf-cutting bee for nest-making.

Campanula hybrids.—Mr. Grove, of Sutton Coldfield, showed a further series of seedlings from *Campanula* Norman Grove, self-fertilised. They showed a great range of variation between the parents of *C. Norman Grove* in colour, stature, habit and foliage. Mr. Grove had taken great pains to record the parentage and variations in the seedlings he had obtained, and the Committee recommended the award of a Certificate of Appreciation to Mr. Grove.

Lime wood attacked by fungus.—Mr. Bowles showed a specimen of lime from a branch which had fallen from a tree in the avenue at Forty Hall, Enfield, in which the annual rings of wood were separated from each other. This separation had evidently been brought about by a fungus, the mycelium of which could be discerned as a thin pellicle between the rings, but could not be further identified in the absence of fruit.

A curious Onion.—Mr. H. J. Chapman showed a curious Onion consisting of a basal stem portion from which roots had developed and a fistular leaf of over an inch in diameter and more than a foot in length. It was perhaps the result of injury to the terminal bud of the shoot, and the direction of all the food and water into one channel.

Abnormal Agapanthus.—Mrs. Bischoffsheim sent an inflorescence of *Agapanthus umbellatus* having a few flowers branching from the stem about 3 inches below the main umbel. The stem bent sharply there, and owing to the tension set up had cracked and broken. This kind of malformation is very common in *Agapanthus*.

Malformed Cyrtopodium.—Mr. C. J. Lucas sent a curious malformed specimen of *Cyrtopodium warhamensis* × *C. insignis*, upon which Mr. Worsdell reported as follows: "The anterior sepal is separating, or, rather, has begun to divide into its two original components, as shown by the apical division and the extension of the arc of insertion of the sepal towards the 'posterior' side. One of the narrow elongated petals has disappeared. The other has become displaced in order to occupy the median posterior position of the posterior sepal, which has also vanished. Thus there is dimery of the corolla, lateral petal and labellum in the median plane, and a tendency to dimery of the calyx, which, if it had been carried through, would have resulted in two sepals placed in the transverse plane, at right angles to the two petals. The two lateral stamens of the inner whorl, normally fertile in *Cyrtopodium*, are here quite absent. Instead the median stamen of the inner whorl is present and fertile just above the big staminode."

NATIONAL GLADIOLUS.

AUGUST 4.—On the above date the National Gladiolus Society held its Summer Show at the R.H.S. Hall. Owing to the war and the impossibility of bringing flowers from abroad, none of the society's Dutch or French members was able to compete, and very few of the classes

filled. Owing to pressure on the L. and S.-W. Railway the parcel containing the schedules, entry and award cards was unfortunately lost, and the judges were therefore obliged to mark their awards on plain white cards, which undoubtedly made matters very difficult both for the public and the Press.

Both Major CHURCHER, of Alverstoke, and Mr. H. EMMONS, of Hamble, were successful exhibitors, and showed two or three fine seedlings of their own raising. New varieties from the society's trial ground were brought before the Committee, and Awards of Merit were granted to the following:—

"Vanessa," raised by Messrs. Kelway and Sons

"Wilhelm Steinhausen," raised by Mr. W. Pfitzer.

"White Giant," raised by Messrs. Van Meerbeek and Co.

"Erica von Barczay," raised by Mr. W. Pfitzer.

"Nonpareil," raised by Messrs. Kelway and Sons.

"George Gordon," raised by Messrs. Kelway and Sons.

"Picotee," raised by Messrs. Kelway and Sons.

"Red Emperor," raised by Mr. K. Velthuys.

"Mrs. Swainson," raised by Messrs. Kelway and Sons.

"Princess Patricia," raised by Messrs. Kelway and Sons.

"Mrs. Robert Wordsworth," raised by Messrs. Kelway and Sons.

Awards of Merit for good garden varieties were granted to "Brilliant" (J. L. Childs) and "Princess of Orange" (M. F. Wright).

ROYAL SCOTTISH ARBORICULTURAL. Aberdeen Branch.

AUGUST 7.—The members of the Aberdeen branch of this society, on the invitation of the Governors of the Aberdeen and North of Scotland College of Agriculture, visited Craibstone estate, now the property of the college, on August 7. There was a capital attendance, the three counties served by the branch—Aberdeen, Banff and Kincardine—each sending its full quota of landed proprietors, estate agents and professional foresters. The weather was good, and the large company spent an informative and interesting afternoon. On arrival at Craibstone the party proceeded to view the forest garden and demonstration area of some 30 acres. This is now being prepared, and the Development Commissioners have granted £250 to aid the work, with an additional £100 a year for five years towards the expense of maintaining a lecturer or demonstrator. The soil of the area is good, and the situation not too exposed, suitable shelter being afforded by a series of morainic mounds which set off various clumps of trees to considerable advantage. Already on a portion of the area Scots Pine planted a few years ago are growing vigorously, while attention is also being paid to other forest trees for educational purposes, the idea being to have a portion of the estate laid out to demonstrate the possibility of having timber of commercial value grown on sylvicultural principles as apart from arboricultural specimens. The expressed opinion of the visitors was that for educative and demonstrative purposes the place is admirably suited. Much of the success of the scheme, however, will depend upon circumstances—the chief being the question of finance.

WALSALL FLORAL AND HORTICULTURAL.

AUGUST 3 AND 4.—The thirty-sixth annual exhibition of this society was held on these dates, and was a great success, the quality of the exhibits being remarkably good.

In Class 1, for a group of plants, not to exceed a space 15 feet in circumference, and in the class for 6 stove or greenhouse plants, the 1st prizes were awarded to Messrs. JAS. CYPRIEN AND SONS; 2nd, Sir GEORGE KENRICK (gr. Mr. J. V. MacDonald).

... the class for 48 Roses Mr. W. H. FRET-

TINGHAM, Beeston, Nottinghamshire, was 1st, conspicuous varieties in his exhibit being George Dickson, Madame Constant Souppert and H. V. Machin. In the class for 24 Roses, dissimilar, Mr. FRETtingham was again 1st, his exhibit including specimens of the varieties Marquise de Ganay, Mabel Drew and Mrs. George Shawyer; 2nd, Messrs. ARTHUR R. BROWN, LTD. For 12 Roses, dissimilar, the same competitors were placed 1st and 2nd as in the foregoing class.

In the class for 12 Roses of one variety Mr. FRETtingham was again 1st, showing the variety George Dickson; 2nd, Mr. L. HORTON, Wolvehampton, with the variety Frau Karl Druschki.

The classes for Carnations and Picotees were keenly contested, Mr. F. BAYLISS, Walsall, being 1st for 12 fancies; 2nd, Mr. R. S. RUDD, King's Heath. The prizes went in the same order for 12 selfs, and in the class for 12 yellow-ground Picotees Mr. RUDD was 1st and Messrs. A. H. BROWN 2nd.

For 12 vases of Sweet Peas, 20 stems in each vase, 1st, Mr. W. PHILLIPS, Astley; 2nd, Rev. J. R. REES, Helpringham.

There were not many entries in the fruit classes, and Mr. J. ASPINALL, Walsall, was the principal winner. There were many fine exhibits of vegetables, the chief prize winners being Mr.



THE LATE THOMAS A. H. RIVERS.

G. W. ROBINSON, Burton-in-Needwood, Mr. E. WINCHESTER, Rubery; and Rev. J. R. REES.

TRADE EXHIBITS.

Gold Medals were awarded to the CLURY NURSERY CO., King's Langley, Buckinghamshire, for a collection of Perpetual-flowering Carnations; and to Messrs. BAKERS, Wolverhampton, for a collection of herbaceous plants.

Silver Medals were awarded to Messrs. SIMPSON AND SON, Chad Valley Nurseries, Birmingham, for Phlox and Antirrhinums; Messrs. ARTHUR R. BROWN, LTD., King's Norton, for Carnations and Roses; Messrs. T. B. GROVE AND SONS, Windley Nursery, Sutton Coldfield, for herbaceous plants; Messrs. H. WOOLMAN AND SONS, Shirley, for a collection of Zonal leaved Pelargoniums; and to Mr. R. G. ROSE, King's Heath, for Border Carnations.

Obituary.

THOMAS ALFRED HEWITT RIVERS.—We have to record with deep regret the sudden death, on the 6th inst., of Mr. Thomas A. H. Rivers, the elder of the two brothers who, until recently, constituted the well-known firm of nurserymen at Sawbridgeworth, Hertfordshire. Deceased had just completed his fifty-second year; he was born on August 5, 1863. He had not enjoyed good health for some years past, but his sudden death was not anticipated. The eldest

son of the late Thomas Francis Rivers, he was educated privately, and was at Felsted School, 1877-79. In 1886 he went to Colorado, America, where he spent eight years in mining and ranching. Returning to the Sawbridgeworth nurseries in 1894, he has since taken an active part in the business, but was most closely associated with the farming department and the outdoor section of the extensive nursery grounds. He took an active part in the British Fruit Growers' Association, and within the past few weeks was invited to serve on the Fruit Committee of the Royal Horticultural Society in place of his younger brother, Mr. Henry Somers Rivers, who is now serving in the Sportsman's Battalion of the New Army. The deceased was a member of the Horticultural Club and of the Management Committee of that body. In private life he was both a churchwarden and school manager at Sawbridgeworth, taking also an active part in parochial and other charities. He officiated as a Steward for the Gardeners' Royal Benevolent Institution on several occasions. Deceased leaves a widow and five children, to whom our sympathies are tendered. His widow is the daughter of Colonel Hall, of Tonbridge, Kent, and her eldest son is now training for the Navy. The interment was in the family grave at Great St. Mary's, Sawbridgeworth, on Monday last amidst many manifestations of sympathy. J. H.

ANDREW HUTTON.—Gardeners all over the country, but particularly in Scotland, where he was best known, will hear with regret of Mr. Andrew Hutton's death. For the past five years deceased was gardener to C. E. Gunther, Esq., of Tongwood, Hawkhurst, Kent, a position he filled with great credit. Before entering on his duties at Tongwood he was gardener to G. Keith, Esq., of Usan, Montrose, a very keen florist who encouraged his gardener to exhibit. Many were the trophies that fell to Mr. Hutton at the great autumn shows at Dundee and Aberdeen for his exhibits of fruits and vegetables. Chrysanthemums also claimed his attention, and he won the Scottish Cup twice at Edinburgh, besides many other honours, and just previous to the death of Mr. Keith he won the Challenge Trophy for Roses at the Dunfermline Rose Show. Mr. Hutton's duties at Tongwood allowed him but little time for exhibiting. Here there are extensive fruit orchards, a large glass department, and a garden which is particularly rich in choice rock and border plants, trees, and shrubs. His fitness for the new post was quickly apparent, and Tongwood Gardens to-day bear evidence in abundance of his energy and ability. It can be truly said that his life was one of hard work and close attention to duty. His enthusiasm for the work he loved so well kept him at his post long after weakness and sickness had sapped his strength. He was laid to rest at Hawkhurst Churchyard on Tuesday of last week amid many tokens of respect from the whole district. Mr. Hutton leaves a widow and young daughter to mourn his loss.

THOMAS FOULDS.—We regret to learn from the American Press of the death of Thomas Foulds, on June 18, at the age of 69. Deceased was a native of Lancashire, where he was trained as a gardener. In the year 1867 he emigrated to America, and later filled several positions as head gardener. Subsequently he started a florist's business at Gwynedd, Pa., and having managed it successfully for about nine years he sold it and went to Northampton, Mass., where he had charge of the grounds of the People's Institute. Finally he was manager of the Lenard Estate in Amherst, Mass., which position he held until his death. Deceased was an enthusiastic gardener, and was the originator of the Chrysanthemum Major Bounaffon. Twice married, he leaves a widow, two daughters, and three sons.

ARTHUR YOUNG.—We regret to state that as these pages go to press, news reaches us of the death of Mr. Arthur Young, gardener to the Earl of Dudley, Witley Court, Worcester. Deceased, who had filled the position at Witley for nearly a quarter of a century, is reported to have died in London on the 7th inst., following upon a surgical operation.

ANSWERS TO CORRESPONDENTS.

ANTS: J. P. If the nests are in positions where it is possible to pour boiling water over them this is sufficient to destroy the ants. Failing this it may be possible to inject a little bisulphide of carbon, or Vaporite, the fumes of which will at once cause death to the ants.

APPLES DISEASED: Caltha. The injury is caused by Apple scab (*Fusicladium dendriticum*), a fungus which attacks the leaves and fruits. Remove all the dead shoots, and next spring when the buds are beginning to open spray the trees with diluted Bordeaux mixture, repeating the operation when the petals are falling from the flowers, and again when the young fruits have attained the size of Peas.

BEANS DYING: Anxious. There is no disease present on the parts of the plant sent. The appearance suggests a fungus at the roots. Add kainit to the soil before planting another crop.

CATERPILLAR: A. E. N. The larva of the privet moth.

CHRYSANTHEMUM MAXIMUM: Caltha. There is no doubt that the failure of Chrysanthemum maximum to develop its ray florets is due to some cultural or climatic condition, and not to any disease. In the case of Chrysanthemum cultivation in pots, it frequently happens that plants that are cultivated for the production of large blooms fail to expand their florets in much the same way as your Chrysanthemum maximum. In the case of a florist's Chrysanthemum, the condition is due to a variety of causes; such, for instance, as selecting the buds too early, extra hot sunshine during the development of the buds, or to the excessive use of stimulants. It may be that your Chrysanthemums have been growing too strongly; at any rate something has operated to bring about the condition which cultivators frequently describe as "hard buds."

COLD STORAGE FOR LILY BULBS: H. S. You are right in assuming that your want of success in storing imported bulbs of *Lilium Harrisii*, *L. longiflorum* and *L. speciosum* is due to the fact that the cold has been sufficiently severe to injure the bulbs. In order to retard any bulb or plant by cold it is only necessary to employ that degree of cold which is essential to prevent growth. Therefore a few degrees below freezing point for the *Lilium* would be much better than having the temperature at 13 degrees below that point which you have already tried. Respecting the book you desire on the forcing of Tulips, you cannot do better than get the volume *Tulips*, by the Rev. J. Jacob, in the Present-Day Gardening Series, as he deals with the question of forcing Tulips and enumerates the varieties best suited for this work. You can obtain a copy from our publishing department price 1s. 9d. post free. We may add that no bulbs that have been potted up should be allowed to remain plunged in the ashes out-of-doors after the pots are moderately well filled with roots, it being essential that the top growths should be delayed until the plants are introduced into heat.

CORRECTIONS.—At the Lancashire Agricultural Society's Show (see p. 92), Messrs. Alex. Dickson and Sons, Ltd., were awarded a Large Gold Medal for their exhibit of Sweet Peas. Messrs. W. and J. Brown, Peterborough, were 1st in the class for a table of cut flowers covering 100 feet, exhibiting cut Roses, and Mr. Garner 2nd.

EUPHORBIA PULCHERRIMA (POINSETTIA): M. S. A., Wimbledon. Euphorbias, or Poinsettias, as they are generally termed in gardens, are extremely delicate plants, and even under the best cultivation that long experience can give them, it is sometimes difficult to prevent the plants losing some of the lower leaves before the season comes round for the brilliantly-coloured bracts. In your case, the plants have probably suffered a check, either through lack of water at the roots on a particular occasion or exposure to cold winds, this latter being quite sufficient to cause Poinsettias to

cast many or all of their leaves. You state that the specimens are growing tall, and we assume that you mean to convey that they are growing taller than you wish them to grow. This excessive elongation is probably due to the plants being placed too far from the light. They should be cultivated during the summer in a light frame with their heads near to the roof glass, or if they have to be grown in the greenhouse or stove care must be taken to give them the same light conditions as they would enjoy if a frame were available. For further hints on the cultivation of Poinsettias refer to the following issues: July 24, p. 51; May 22, p. 276; and May 10, p. 194.

FIGS: E. H. You do not say whether the outdoor Fig tree has ripened its fruits in previous years. It looks as if for some reason or another the flowers, which of course are borne in the interior of what we term the fruit, have failed to set. Consequently the fruit seeds are not formed and the fruit ceases to develop, and is cast off by the tree. It is impossible here to determine the reasons for the failure, but an inspection of the tree might at once reveal them.

FUNGUS: H. R. The fungus is *Phallus impudicus* (Stinkhorn) in the egg stage.

GARDENER'S NOTICE: W. P. In the absence of any agreement to the contrary, we should assume that you are entitled to a month's notice, or a month's salary in lieu of notice. In any case after twelve years' service you could scarcely be expected to be turned away with only a week's notice, unless there are circumstances which would justify summary action on the part of the employer, and you do not refer to anything of the kind in your letter.

GRAPES DISEASED: S. W. and A. Black rot (*Guignardia Bidwellii*) is present. Remove and burn every leaf and fruit that is diseased. Next spring, when the leaves are unfolding, spray with Bordeaux mixture, and repeat the operation at intervals. When the fruit is half-grown use ammoniacal solution of copper carbonate in place of the Bordeaux mixture so as to avoid spotting the fruits.

MELON LEAVES DISEASED: B. P. L. Melon spot mould or blotch (*Cercospora melonis*) is present. Every diseased leaf should be burnt as soon as the malady is detected, treating the whole plant in the same manner if the attack is severe. Spray the plants at intervals of four days with a solution of liver of sulphur, at the strength of one ounce in five gallons of water.

MELON PLANTS DYING: Subscriber. Eelworms are the primary cause of the injury. Wash some sulphate of ammonia into the soil, which should be sterilised when the plants are removed.

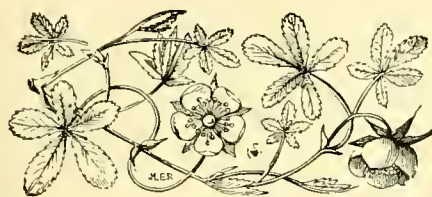
NAMES OF PLANTS: P. B. B. 2, *Ammophila arundinacea*; 3, *Cotoneaster frigida*; 4, *Gyneryum argenteum*; 5, *Spiraea palmata*; 6, *Polygonum sachalinense*; 7, *Saxifraga petata*; 8, *Inula glandulosa*; 9, *Lysimachia vulgaris*.—*F. Clarke*, 1, *Thlaspi latifolium*; 2, *Chenopodium urbicum*.—*A. J. Ivens*, *Dianthus* sp., but specimen insufficient for proper identification.—*G. F. I.*, *Juniperus Sabina*; 2, *Juniperus* sp. We cannot recognise this in its present juvenile condition.—*R. T. W.*, *Helichrysum rosmarinifolium*, a native of Tasmania.—*G. Edwards, Taunton*, *Fuchsia corymbiflora*.—*G. B., Bucks.*, *Equisetum arvense* (Field Horse-tail).—*A. Z.* Probably *Yucca* or *Agave*. Send leaf or a portion of a leaf with description.—*C. R., Tonbridge*, *Momordica Balsamina*. One of the Gourds (*Cucurbitaceae*) allied to *Momordica Charantia*, which usually has reddish fruits.—*Nedos, Chard*, *Gloriosa grandiflora*, of which a full-page illustration was given in the *Gardeners' Chronicle*, September 10, 1904, together with an article on *Gloriosas*.—*W. S., Oswestry*, 1, *Polygala myrtifolia grandiflora*, known in gardens as *P. Dalmatiana*; 2, *Euphorbia Lathyris* (Caper Spurge).

NECTARINE EARLY RIVERS: H. B. and A. G. K., M. The condition of the Nectarines is due to frequent syringings. Early Rivers Nec-

tarine has a somewhat sensitive skin, and if the water stands on the fruit too long in the day the sun scalds the skin and causes the fruits to rot. Lord Napier is also a variety given to this trouble, but we think you will be able to remedy it by care in syringing. If the trouble cannot be prevented in the manner we have described the particular specimen may have been budded on a stock that does not suit it. Early Rivers usually succeeds in a cold house, or with a little heat, and if the other trees are doing well in the same house the best thing to be done is to clear the tree out and try another specimen of the same variety.

SOIL STERILISATION: A. Niel and D. S. and Son. The sterilisation of soil on a large scale out-of-doors is an operation attended with considerable difficulty. You will find particulars with illustrations in our issue for March 2, 1912, page 146. But at the best the appliances at present available for these operations leave something to be desired, and it may be hoped that some ingenious cultivators may devise some simple means by which sterilisation on a large scale may be made easy. This is the more to be desired seeing the frequent reports that reach us as to the excellent results following the sterilising of soil for indoor plants. We now give the following information respecting soil sterilisation under glass. Soil sterilisation may be effected either by chemical means, or by heating. The former has not yet been sufficiently developed to allow of application on a large scale. Three heating methods are in use under glass, and all of them have certain advantages, the choice between them is largely dictated by reasons of convenience. (1) *Baking*.—The soil is placed in some sort of heater, of which there are already two or three on the market, and heated either by coke or with waste material for any period up to 24 hours. This method works well for small quantities, and has the advantage of cheapness. It requires, however, that the soil should be carried to the heater and back again, and therefore breaks down where large areas have to be dealt with. (2) *High Pressure Steam*.—Two methods are used. In the first a box is made, without top or bottom, about 6 to 9 feet by 3 feet, and some 18 inches deep. This is placed on a grid, formed of iron pipes $1\frac{1}{2}$ to 2 inches in diameter, perforated with $\frac{1}{8}$ inch holes, and connected with a boiler; steam is blown in at a pressure of 40 to 80 lbs. for twenty minutes. The soil is then thrown into a heap. In the other method the steaming is done in the soil itself; a trench is dug the same size as the grid, this is then placed in the bottom, the soil replaced, and steam blown through. Meanwhile another trench is dug alongside the first, from which the grid is then hauled out by means of hooks. (3) *Low Pressure Steam*.—This can be used in the same way as the high pressure steam, but a longer time must be allowed. Another method has also come into use. The soil is forked over, and on it is inverted a tray made of galvanised iron backed by boards; the steam is then blown underneath and finds its way into the soil. Six feet has been found to be a convenient length for the sides of the tray. An iron pipe $1\frac{1}{4}$ inch in diameter is used for the steam main, it terminates in T, so as to facilitate the distribution. The time of steaming depends on the soil, and it can be ascertained by finding how long is required to heat the soil to a depth of 8 inches up to a temperature of 180°. For large areas and for border work this is the most convenient of all methods. Fuller information is given in "Reports on the Partial Sterilisation of Soil," by E. J. Russell and F. R. Petherbridge, *Journal of the Board of Agriculture*, Jan., 1912, Jan., 1913, and May, 1914.

Communications Received.—J. H. T. (Thanks for E.I. for R.G.O.F. box)—Anxious—X. Y. Z.—W. F.—F. T.—H. T.—C. S.—R. G. M.—G. R.—G. H. D.—T.—A. C. B.—T. H.—K. A.—A. C. B.—H. C. V.—G.—H. P.—D. B.—R.—F. M.—T. L.—P. B.—W. K.—A. R. B.—R. B.—C. P.—A. T.—G.—C.—E.—S.—J. McD.—H. J. G.—W. A. C.—W. C. C.—W. B.—H. G.—C.—Lt. Col. F. G. L. M.—P. T. (Ohio)—C. H. T.—C. E. P.—G. C. J. (Washington).



THE Gardeners' Chronicle

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FOREST TREES IN TRENCHED AND UNTRENCHED GROUND.

THE RATES OF GROWTH.

I HAVE recently been reading a very interesting paper in the July number of the *Journal of Forestry* "on the harmful effects of certain Grasses and weeds around the roots of young forest trees." I heartily commend its perusal to readers of the *Gardeners' Chronicle*, and especially to those, if there be any, who are not already convinced of the advantage which young trees gain from being in open ground as against those which stand on turf.

The paper gives details of some experiments which were carried out at Ryston in 1912. Fourteen plots were laid out, 7 feet long by 3 feet wide, and on each of them were planted three common Ash and two Larch. Two plots were kept clear of all other growth; one was sown with Stinging Nettle, one with Creeping Buttercup, and the remaining ten plots with various kinds of Grasses such as are commonly found in young plantations.

The result was as follows, taking 100 as the percentage of growth in the two clean plots. The least harmful of the ground coverings proved to be the Creeping Buttercup, where, however, the percentage of growth of trees was only 52, or little more than half that in the clean ground. The next was the Stinging Nettle, where the percentage was 41. In the case of

plots covered with various Grasses the percentage ranged from 33 to 13, the covering of the ground which proved most detrimental to tree growth being Couch Grass and perennial Rye Grass, in which two cases the rate of tree growth was but 15 and 13 per cent. respectively. There appears to have been but little difference in the effect of the various crops on the Ashes as distinguished from the Larches. A photograph of the Ashes and their foliage, which accompanied the paper, brought out very markedly the difference not only in height of the trees growing on clean ground, but in the colour, size, and appearance of the foliage.

Reading this paper, of which I have given a short and imperfect account, has tempted me to set out the results of a somewhat similar experiment which I have made (unintentionally) at Aldenham of the different rate of growth of trees of the same kind when planted in trenched and untrenched ground. Some eighteen years ago I planted a row of fourteen Maples (Acer Schwedleri). Twelve of them stand on lawn, being planted in holes 6 feet across, which are kept clean and free from turf and weeds. At the time of planting the clay was removed and the holes filled with good light loam. The thirteenth stands half on lawn, half in a shrubbery where the ground was well trenched; the fourteenth stands wholly in trenched ground.

About the same time, perhaps a year later, I planted fourteen Copper Beeches, and in this case, too, the conditions are the same, twelve trees being in a field, the thirteenth on the edge of a trenched plantation, and the fourteenth growing wholly in the plantation. About the year 1875 my late father planted a double avenue of Horse Chestnuts along the drive in the park. The holes made were not large, and there was no breaking up of the adjoining ground, consequently though the trees are healthy the growth has been very slow. Some eighteen years ago it was decided to put a new bridge over the lake at the end of the Chestnut avenue, and this necessitated a gradual raising of the drive as it approached the bridge, and the consequent lifting and replanting of the first trees in the loose, newly-raised ground at the sides of the road. Although it might have been expected that moving fairly big trees aged about twenty-four years would have checked their growth and thrown them behind their unmoved brethren, yet so great has been the advantage to them of growing in what is equivalent to well-trenched ground that it has much more than compensated them for the check of moving, and now after eighteen years they are bigger, taller, with wider spread, more vigorous and darker foliage, and in every respect finer than the unmoved ones.

I will now set out in tabular form the results in all three cases of planting in trenched and untrenched ground, and I hope it will convince any intending planters who read these lines, that, at any

rate on heavy clay land like ours, the labour and cost of trenching is not only not thrown away but is absolutely essential to successful planting. Many years ago when I had less experience than I have now, I tried making small plantations without trenching, as I grudged the labour and expense. The attempt resulted in total failure. After wasting ten to fifteen years I had to have the ground trenched after all, and young trees planted in between the others, and these have already passed those which had a long start of them. I can say broadly that on this heavy London clay all trees benefit enormously by trenching, and as for even the hardest Conifers, they will not grow at all without it, for when their roots reach the walls of the hole they fail to penetrate, and the trees become hole-bound.

TRENCHED GROUND.

	Height.	Circumference of branches.	Girth 3ft. 6in. high.
	ft. in.	ft.	in.
Maple ..	26 6	60	25
Copper Beech ..	31 0	57	28
Horse Chestnut ..	40 0	106	51

PARTLY IN TRENCHED GROUND.

Maple ..	23 0	57	18
Copper Beech ..	27 3	42	18½

UNTRENCHED GROUND.

Maple ..	19 0	42	13½
Copper Beech ..	19 9	36	12
Horse Chestnut ..	34 0	75	34

There is one other matter which I should like to mention before concluding my remarks. Although the deleterious effect of Grass and weeds on young trees, referred to in the earlier part of this article, is generally recognised, yet the expense of weeding is so prohibitive that it is usually abandoned the moment that the trees are high enough not to be choked by the Grasses. Yet, if people would only realise it, it is possible to take most satisfactory crops of vegetables, such as Potatoes, Cabbages, Kale, Savoys, Broccoli, and Turnips, off ground where the young trees are eight to ten years old, and range from fifteen to twenty feet in height. I should like to show any readers of the *Gardeners' Chronicle* the young covert at Aldenham, where every available inch of ground is cultivated, and has been cultivated, with profitable vegetable crops ever since the trees were planted. Of course, in time of war and high prices, such as we are living in now, a very good profit can be made out of vegetables from land which would otherwise lie idle, but the same crop was taken two or three years ago when the German peril was scoffed at by the majority, and when the primary object of such planting was to make the crop pay for the cost of weeding. Certainly the result has been to produce an abnormally rapid and satisfactory growth in the mixed timber, with which the young wood is planted, and which consists for the most part of Ash, Oak, Norway Maple, Hornbeam Elm, Cherry, Birch, and Lime. Some parts which have only been planted three and four years have all the appearance of five to six years' growth. I should add that the land has not only been well trenched, but well drained with open ditches, otherwise the results would have been very different. *Vicary Gibbs.*

ORCHID NOTES AND CLEANINGS.

SEEDLING ORCHIDS IN UNHEATED HOUSE.

IN Mrs. Bischoffsheim's Gardens, The Warren House, Stanmore, a very interesting point bearing on the possibility of keeping quite small seedling Orchids, and by inference larger ones, in an unheated house during the summer months has been demonstrated. The seed-raising house was one of a block heated by a used boiler, which it was intended to replace by a new "Robin Hood." In June the work was put in hand, and Mr. F. Jones, the Orchid-grower at Warren

NOTICES OF BOOKS.

CLIMBING PLANTS.*

A NEW volume in Messrs. Jack's admirable "Present-day Gardening" series is sure of a warm welcome from professionals and amateurs alike, doubly so when it comes from the competent hand of Mr. Watson, curator of Kew Gardens. In one respect the title, *Climbing Plants*, is somewhat misleading, inasmuch as the author treats not only of true climbing plants, but of many plants which can only be termed "climbing" in the sense that they may be trained against a wall, a discipline to which almost any plant can be forced to submit. For

over a heavy-topped pergola cannot be properly seen from the inside." The only type of pergola which is both beautiful in summer and not unsightly in winter is that which, in the time of Roses, is one of the chief attractions in Kew Gardens—namely, a series of arches at wide intervals with side rods connecting the tops of the standards.

Was it a covert sense of humour that caused Mr. Watson to persuade Mr. W. Robinson to write an introduction to his volume? In effect it has had the advantage of instructing readers about both sides of certain questions. For instance, in the introduction one reads: "Ivy should not be put on a house or wall. . . . Ivy takes care of itself in the woods and copses, and though some people are careful to cut it off trees, it is a mistake to do so. . . . I rather like taking one of the fine forms of Ivy and putting it at the base of a tree, with a stone over it, leaving it to climb up" (pp. 3 and 6). Mr. Watson, on the contrary, writes of Ivy as "a public benefactor" in masking ugly buildings. "It is not so harmful to buildings as some people suppose," but "that its presence on trees is injurious to them cannot be gainsaid" (p. 57).

Again, about the management of Clematis Mr. Robinson writes: "I lately read in one of the great morning papers elaborate directions for pruning Clematises—whether one should prune last year's growth, or this year's growth, or some other year's growth. It was probably written by one of the lady students at some horticultural college. If we had one here we could hardly place her 40 feet high in a Corsican Pine to prune a Clematis. By giving up all pruning trouble is saved and one gets a more picturesque result." Mr. Watson's experience leads him to a very different conclusion. "Pruning," says he, "is one of the important points of good management," and he devotes Chapter IX. to general instructions upon the system to be followed in cultivating the various groups in the genus. Much disappointment, the inevitable lot of purchasers, might be averted if growers would only adopt Mr. Watson's view that grafting is not the best way to propagate Clematis, and that it is done as easily and quickly from internodal cuttings, as recommended by Professor Balfour. It would have been an incalculable boon if Mr. Watson had revealed the secret of pruning Wistaria, after which some of us have been groping for many years.

In a small volume treating of stove, greenhouse and hardy climbers, it would be unreasonable to expect more than a very limited selection of species. Moreover, there are manifest difficulties in preparing a list adapted for all parts of the United Kingdom. It would be an extravagant waste of wall space in mild districts to plant some of the shrubs recommended for walls, such as *Fabiana*, *Griselinia*, *Leptospermum*, *Olearia macrodonta*, which over a great part of the country require no protection. I cannot endorse Mr. Watson's approval of *Lonicera Henryi*, a profuse flowerer indeed, but much inferior in beauty to our native Honeysuckle. *L. tragophylla*, which is not mentioned, is far more brilliant than either.

The distinction between north and south in relation to British climate is a deceptive one. Thus, although the author describes *Hydrangea petiolaris* as being "quite hardy in the south and well adapted for covering tree stumps, but requires a wall or cool conservatory in the northern counties," he may travel four hundred miles north of London and find this plant climbing to a height of 30 ft. upon trees in Argyllshire.

No notice of this book would be just that paid no tribute of praise to the illustrations, coloured and plain. Anyone hitherto unacquainted with "Constance Elliot" has only to look at her portrait in the frontispiece to fall in love with her at first sight. The book is wonderfully good value for half-a-crown. Herbert Maxwell.



FIG. 37.—CLEMATIS HENRYI.

From *Climbing Plants*. See Review on this page.

House, removed most of the seed-pots and stores to a warm house in another range.

A good number of seed-pots with numerous young plants in various stages, from which a sufficient stock had been pricked off and removed to the heated house, were allowed to remain in the cases in the house from which the heat had been cut off from the middle of June until the present time. Although the weather, especially at night, on some occasions has been dull and colder than usual, not one of the little plants has died, and all compare favourably with those which were removed to a warm house. Indeed, the sturdy look of the numerous little seedlings seems to indicate that when artificial heat is again turned on they may, as a result of the change, make better progress than their fellows which were kept warm during the temporary disarrangement caused by the fixing of the new boiler.

instance, a very remarkable effect may be seen at Keir House, in Perthshire, where a row of the Italian Cypress (*C. sempervirens*) has been planted against the south front of the mansion, forming a series of slender green columns from plinth to cornice. Howbeit, what most people want to be informed about is the growths that may be applied with best effect as wall-covering, and Mr. Watson is an ideal guide in that matter.

He offers timely warning, as well as encouragement, to ambitious gardeners. The craze for pergolas is as prevalent at present as that for rockeries, one being the cause of almost as many dismal results as the other. Mr. Watson wisely observes that, in a climate where sunshine is more to be desired than shade, the proper function of a pergola is to serve as a support for climbing plants; but even so, "the plants trained up and

* *Climbing Plants*. By William Watson. "Present-Day Gardening" Series, Vol. xvii. (London: T. C. and E. C. Jack, 1915.) Price 2s. 6d.

THE FLOWERS OF MILTON.

(Concluded from p. 99.)

REED.

1. The balmie Reed. *P. L. V. 23.*
2. Part incentive Reed *Provide. P. L. VI. 519.*
3. A Seraph stood and in his hand a Reed. *P. L. VI. 519.*
4. Up stood the Cornie Reed *Embattled in her field. P. L. VII. 321.*
5. The Pastoral Reed *Of Hermes. P. L. XI. 132.*
6. Sound of pastoral Reed with oaten stops. *Comus, 345.*
7. All at once their Reeds *Put forth. P. L. VI. 532.*
8. Where winds with Reeds and Osiers whisp'r-ing play. *P. R. II. 26.*
9. Smooth-sliding Mincius, crown'd with Vocal Reeds. *Lycidas, 86.*

The Cornie Reed in No. 4 is Wheat.

ROSE.

1. Sight of vernal bloom or Summer's Rose. *P. L. III. 43.*
2. Flowers of all hue and without Thorn the Rose. *P. L. IV. 256.*
3. She strews the ground *With Rose and odours from the Shrub unfum'd. P. L. V. 349.*
4. Gentle Aires from their wings *Flung Rose, flung odours from the epicie shrub. P. L. VIII. 517.*
5. As killing as the Canker to the Rose. *Lycidas, 145.*
6. Like a neglected Rose *It withers on the Stalk with languist bead. Comus, 743.*
7. Impurpl'd with Celestial Roses smil'd. *P. L. III. 364.*
8. Iris all hues, Roses and Gessamin. *P. L. IV. 698.*
9. And on their naked limbs the flourie roof Show'r'd Roses. *P. L. IV. 773.*
10. In yonder Spring of Roses. *P. L. IX. 215.*
11. So thick the Roses basking round About her glow'd. *P. L. IX. 426.*
12. Down drop'd and all the faded Roses shed. *P. L. IX. 899.*
13. And fresh-blown Roses washt in dew. *L'Allegro, 23.*
14. And ye, the blooming Roses of the wood. *Arc. 32.*
15. Beds of Hyacinth and Roses. *Comus, 997.*
16. Courts thee on Roses in some pleasant Cave. *Herace, Ode, 2.*

In all these passages there is not one that can be called descriptive of the Rose except its scent, which may be accounted for by Milton's blindness. But I may note on No. 2 that thornless Roses have not been confined to Paradise. They have come down to us. No Rose has a true thorn; it has prickles (*setae*) springing from the bark, but no thorns springing from the wood underneath. In this way we may certainly apply to the Rose what Keble said of other flowers: "Relics ye are of Eden's bowers" (15th after Trinity).

RUE.

Then purged with Euphrasy and Rue
The visual nerve. *P. L. XI. 414.*

RUSH.

The rushy-fringed bank.
Comus, 890.

SAFFRON.

There let Hymen oft appear
In Saffron robe. *L'Allegro, 126.*

Saffron is produced from the stigmas of *Crocus sativus*; once largely cultivated in England, and much thought of as a medicine, but now only used as a colouring for cakes, etc. See also *Crocus*.

SEDGE.

1. Or scattered Sedge. *P. L. I. 304.*
2. His mantle hairy and his bonnet Sedge. *Lyc. 104.*
3. Or rockie Avon, or of sedgeie Lee. *Vac. Ex. 97.*

Any marsh plant.

SWEET BRIAR.

Through the Sweet-Briar or the Vine.
L'Allegro, 47.

THISTLE.

1. Thorns and Thistles it shall bring thee forth. *P. L. X. 203.*
2. Amongst rude burrs and Thistles. *Comus, 352.*

Thistles are the emblem of useless growth; so in another place, speaking of the Education of his day, Milton describes it as "the Asinine feast of sow thistles and brambles, which is commonly set before them."—*Education*.

THYME.

With wikle Thyme and the gadding Vine
o'ergrown. *Lyc. 40.*

VINE.

1. The flow'ry Vale of Sidma clad with Vine. *P. L. I. 410.*
2. The mantling Vine *Lays forth her purple grape and gently creeps Luxuriant. P. L. IV. 258.*
3. The Vine curls her tendrils. *P. L. IV. 307.*
4. They led the Vine *To wed her Elm. P. L. V. 215.*
5. In Heaven the Vines yield Nectar. *P. L. V. 427.*
6. Forth flourish't thick the clust'ring Vine. *P. L. VII. 320.*
7. With wilde Thyme and the gadding Vine o'ergrown. *Lycidas, 40.*
8. Through the Sweet-Briar or the Vine. *L'Allegro, 47.*
9. I saw them under a green mantling Vine *That crawls along the side of yon small hill, Picking ripe clusters from the tender shoots. Comus, 293.*
10. A Vine from Egypt Thou hast brought, *To plant this lovely Vine. Ps. LXXX. 33-36.*
11. Visit this Thy Vine. *Visit this Vine which thy right Hand Hath planted. Ps. LXXX. 60, 61.*

See also Grape.

VIOLET.

1. Underfoot the Violet. *P. L. IV. 700.*
2. The glowing Violet. *Lyc. 145.*
3. There on beds of Violets blew. *L'Allegro, 21.*
4. Pansies and Violets and Asphodel. *P. L. IX. 1040.*
5. The Violet-imbroider'd Vale. *Comus, 233.*

WHITETHORN.

When first the White Thorn blows.
Lyc. 43.

Now known as the Hawthorn.

WOODBINE.

1. To bind *The Woodbine round this Arbour. P. L. IX. 216.*
2. The Musk Rose and the well attir'd Woodbine. *Lyc. 141.*

The same that Milton also calls Eglantine (which see). It is our beautiful wild Honeysuckle, a plant which, though a great many of the same species have been introduced from all parts of the world, still stands unrivalled for beauty and scent.

The Woodbine finishes the flowers actually named by Milton, but something must

be said about his general notices of flowers, gardens, and gardening.

FLOWERS.

I do not quote all the passages, but only those that are more or less descriptive.

1. Each beauteous flour,
Iris all hues, Roses and Gessamin,
Reard high their flourish't heads between, and wrought
Mosaic. *P. L. IV. 698.*
2. From the root
Springs lighter the green stalk, from thence the leaves
More aerie, last the bright consummate flour
Spirits odorous breathes. *P. L. V. 478.*
3. Flours worthy of Paradise which not nice Art
In beds and curious knots, but Nature boon
Pour'd forth profuse on Hill and Dale and Plaine. *P. L. IV. 241.*
4. O flours

My early visitation and my last
At Ev'n, which I bred up with tender hand
From the first op'ning bud and gave ye names. *P. L. XI. 277.*

GARDENS AND GARDENING.

Adde to these retired leasure,
That in trim Gardens takes his pleasure. *Il Pens. 49.*

There are many other passages in which the words garden and gardening occur, but in none of them is there any description of the gardens or of the garden-craft of his day. So I do not quote them, and will only add my wish to the readers of the *Gardeners' Chronicle* that if any of them detect any omissions or mistakes in what I have written they will kindly write to me. *Henry N. Ellacombe, Bitton Vicarage.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See *Tables, Supplement, Gard. Chron., July 24, 1915.*)

(Continued from page 106.)

4. MIDLAND COUNTIES.

NORTHAMPTONSHIRE.—The season for fruit crops is a late one. Plums, Apricots, Peaches and Nectarines were adversely affected by the cold nights of April and May. Drought caused much stone fruit to fall; but showers at the end of June improved the prospects. Our soil is light, sandy loam overlying ironstone, but it is very shallow and dries rapidly. *John Mcager, Harrowden Hall Gardens, Wellingborough.*

—Where orchards have been sprayed and cleansed, there are good crops of fruit of good quality. Apple trees flowered profusely, and set the fruits well. Cherry trees on walls are yielding exceptional crops. All fruit trees have been fed and watered frequently, as we have had very little rain here. The soil has been in cultivation upwards of 70 years. *Richard D. Greenham, Fawsley Park Gardens, Daventry.*

NOTTINGHAMSHIRE.—There are very good crops of all fruits with the exception of outdoor Peaches and Plums, which are failures owing to damage by frosts when the trees were in flower. On June 18 we registered 2° of frost. Our soil is light, on a sub-soil of sand. *James E. Allan, Osberton Gardens, Worksop.*

—The fruit blossom this spring was a wonderful sight. Apple trees are bearing heavy crops in most places, but locally the hailstorm on June 30 damaged the fruit much. Many Pears dropped owing to the six weeks' drought, but some varieties are carrying full crops. Plums vary considerably; a large proportion dropped off, but the varieties Czar and Victoria are cropping well, as also are Early Trans-

parent. Damsons are rather poor. Gooseberries have yielded badly, Currants are good, but many Black Currants are reverting. Of Strawberries, the varieties Royal Sovereign and George V. were excellent, but many of the later varieties suffered from drought. *J. R. Pearson and Sons, Lowdham.*

— We registered 10° of frost on May 3, and 6° on May 14, which caused the failure of Plums, and together with drought and 6° of frost on June 18 completely destroyed the Strawberry crop. The Apple crop is an exceptionally large one, and the fruit looks well. Pears are yielding a good average crop, as also are Cherries, Gooseberries, Raspberries, and all other small

damaged with blight, but Pear trees are healthy. The Raspberry crop was good, but Strawberries were a complete failure, owing to lack of rain. The soil here is a light loam on gravel and chalk, and in a dry season, such as this, it is difficult to obtain good results. This year we are also handicapped by the scarcity of labour. *J. A. Hall, Shiplake Court Gardens, Henley-on-Thames.*

— Considering the splendid show of blossom on all the fruit trees, the crops are very light, this applying especially to Apples. Plums are the most plentiful of the stone fruit. Last summer was not favourable to the growth of Strawberry plants, and the dry weather this

of May and June. Many of the Plums dropped, but this is an advantage in cases where the crops set heavily. Cherries were small and inferior. Apples are variable, and have suffered from attacks of aphids. Our soil is heavy loam. *G. T. Malthouse, Harper Adams Agricultural College, Newport.*

STAFFORDSHIRE.—There are average fruit crops in this district. Early varieties of Strawberries did badly, owing to drought, but such varieties as Givon's Late Prolific did well. Raspberries were excellent. The soil in this district varies considerably, and is clay, gravel and sand. It becomes very hard after heavy rains. *M. Huntley, Old Fallings Hall Gardens, Wolverhampton.*

WARWICKSHIRE.—There were large crops of Gooseberries, Red Currants and Raspberries, but Strawberries were under the average, although the quality was good. The early fruits of Strawberries were injured by frost. On May 15 we registered 10°, which damaged our bush Apple trees very badly, and only Allington Pippin, Lane's Prince Albert and Worcester Pearmain are carrying large crops. *Chas. Harding, Ragley Hall Gardens, Alcester.*

— The fruit crops on the whole are promising. Apricots, Peaches, and Nectarines flowered well, but were damaged by cold winds and frosts, and where no protection was given we have hardly any fruit. Early Strawberries suffered from the drought in June, but late varieties were good. Gooseberries in exposed positions were damaged by frosts. Raspberries and Loganberries are exceptionally good and plentiful. Most varieties of Plums have cropped well. *H. F. Smale, Warwick Castle Gardens.*

— In the low-lying districts, close to the river, where these gardens are situated, Apples, Pears and Apricots are under the average, owing to the frosts and snow on May 13, 14 and 15, when we registered as much as 10° of frost. On higher ground, about one mile from here, only 4° were registered. The soil is heavy. *Wm. Haylock, Ettington Park Gardens, Stratford-on-Avon.*

5, SOUTHERN COUNTIES.

BERKSHIRE.—The fruit crops are good on the whole, but Apples and Cherries have been damaged by blight, which has been more prevalent than for many years past. *A. MacKellar, Royal Gardens, Frogmore, Windsor.*

— The crops generally are very satisfactory, although cold winds during the month of May caused both trees and bushes to suffer from aphids. The Strawberries were smaller than usual, but on heavier land the fruit was of good quality. Nuts and Walnuts are plentiful. *J. Howard, Benham Park Gardens, Newbury.*

— The fruit crops here are very poor, although there was a great quantity of blossom. The frosts in May, however, were severe, the result being that all fruits set indifferently. We have a fair crop of Pears, but Apples are scarce, having suffered much from blight. The soil is light, with a subsoil of solid clay. *Thomas Timson, Shinfield Lodge Gardens, Reading.*

— The fruit crops in these gardens are up to the average, with the exception of Apricots on walls. Apples are not plentiful, owing to blight and drought. All bush fruit trees and Peaches trained on walls have done well. The Strawberry crop was good, but the fruit was small. The soil varies, being chalk or gravel, with a clay subsoil. *A. B. Wadds, Englefield Gardens, Reading.*

— Cherries, Apples and Plums are badly infested with aphids. The soil here is heavy loam over clay subsoil. If mulched before the ground cracks owing to drought, the fruit withstands a dry period very well. *John T. Tull, Bear Wood Gardens, Wokingham.*

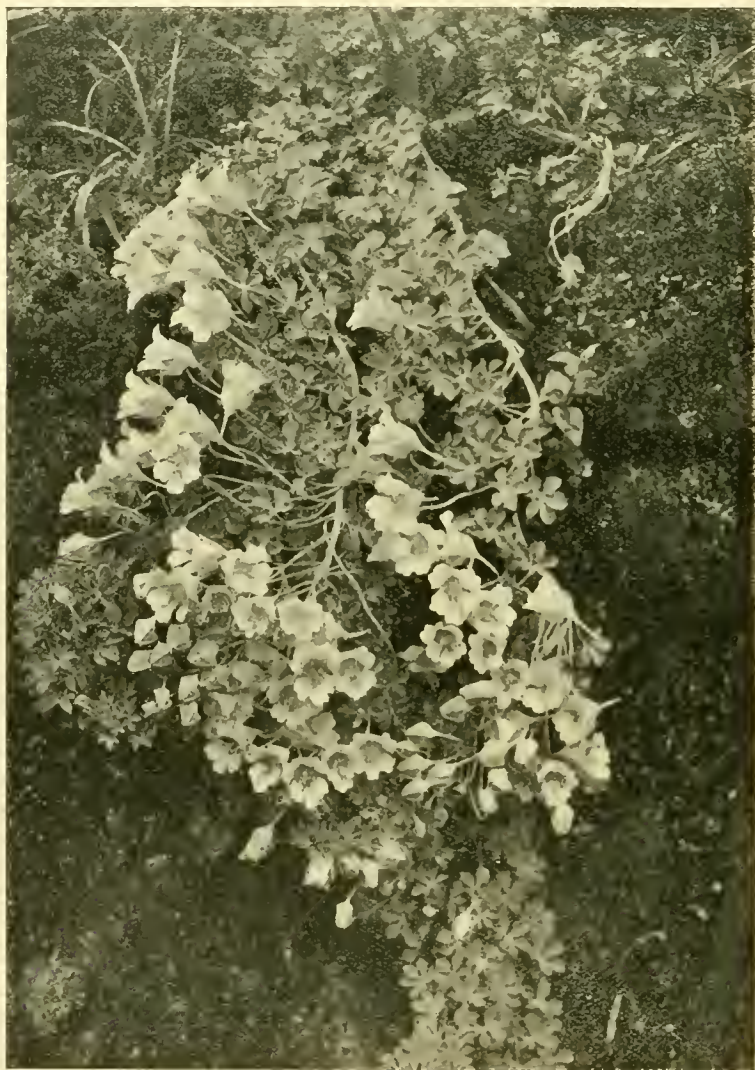


FIG. 38.—TROPAEOLUM POLYPHYLLUM.
From Climbing Plants. See Review on page 112.

fruits. The soil here is of a light sandy nature, resting on a substratum of red sand. *S. Barker, Clumber Park Gardens, Worksop.*

— All fruits, with the exception of Plums and Apricots, are yielding average crops. Apricots, however, are a complete failure, partly owing to the inclement weather when the trees were in bloom. Apples are plentiful. Currants have been above the average, but the prolonged drought of six weeks from the middle of May till the last few days in June encouraged aphids, from which many fruits, and especially Black Currants, have suffered. Gooseberries and Cherries are satisfactory, and nuts are plentiful. *A. C. Lehan, Park Hall Gardens, Mansfield Woodhouse.*

OXFORDSHIRE.—Apple trees are badly

spring was also against a good crop. The late variety, Givon's Prolific, has, however, done well. There is much blight on the fruit trees. *A. J. Long, Wyfold Court Gardens, Reading.*

— The Apple crop was damaged by blight and drought, and the fruit dropped considerably. Strawberries appeared promising until the fruit was injured by late frosts, and the undeveloped blossom was killed. Blight damaged Black Currants, and caused the fruit on old trees to drop; but on recently planted trees a few berries remain. We have a record crop of Raspberries, especially of the variety Superlative. *T. W. Whiting, Shotover Park Gardens, Wheatley.*

SHROPSHIRE.—The fruit crops, especially those of the small fruits, suffered from the drought

— There was plenty of blossom on all fruit trees, but owing to the north-east winds Pears and Apples did not set well. Some Pyramid varieties, however, are carrying good crops. Peaches and Nectarines are yielding good crops. Bush fruits and Strawberries were excellent this year. It has been difficult to keep green and black fly and caterpillars in check owing to shortage of labour. *Fred J. Thorne, Sunningdale Park Gardens.*

— The fruit crops generally are above the average. Apples are exceptionally good, and are free from pests, although there is a great deal of aphid in the district. Pears promised well at the beginning of the season, but a great many of the fruits have dropped. Plums are plentiful, and small fruits generally are above the average. From May 18 to June 25 we were without rain, but we registered 1.75 of rain on the 25th, which greatly benefited the Strawberry crop. *Edw. Harriss, Lockinge Park Gardens, Wantage.*

— There has been a general infestation of aphides, owing in a large measure to a drought of six weeks' duration. A good many Pears are falling, owing to the larvae of the Pear midge. Hand-picking was resorted to in the case of trained trees, but this was not possible in the case of tall orchard trees. Raspberries, Currants and Gooseberries are yielding a large crop of good, clean fruit. The Strawberry season was a short one, but the fruit was of good quality. The soil is a strong clay, overlying chalk. *W. Oliver, Park Place Gardens, Henley-on-Thames.*

— There are exceptional crops of Raspberries and Red Currants, whilst Gooseberries and Black Currants are up to the average. Pears set well, but have fallen in quantities. It has been the worst crop of Strawberries I have had since taking charge of these gardens. Apples vary considerably, some varieties having very large crops and others very small. Apricots and Cherries are not a success on our hot gravelly soil. *J. Atkinson, Oakley Court Gardens, Windsor.*

— There are excellent crops of Black and Red Currants, and Gooseberries are up to the average, the dessert varieties being exceptionally good. Some of the Apples are small, owing to lack of rain. Our soil is rather light, with a gravel subsoil, and unless we have one wet day a week throughout April, May and June, the crops are seriously affected. *W. Topping, Shinfield Manor Gardens, near Reading.*

— Apples are yielding splendidly, and much thinning was necessary. Pears also are good. Red, White and Black Currants are a good average crop, but Gooseberries are unsatisfactory. Plum trees blossomed well, but two frosts late in May did much damage. The late frosts followed by drought did much damage to the Strawberry crop, which previously had given promise of being satisfactory. *L. T. Petty, Arlington Manor Gardens, Newbury.*

DORSETSHIRE.—With the exception of bush fruits, the fruit crops generally present an adverse contrast to that of 1914. Of orchard Apples Annie Elizabeth and Golden Noble are the only two varieties which, although carrying a full crop last year, are bearing again this year. Pears are bearing light crops generally, and, so far, the fruits are small and unhealthy, owing to the severe attack of black aphid. Of Plums, with the exception of Early Prolific and Czar, growing on a south wall, the crop is poor. Of Cherries, both Sweet and Morello, the crop is much under average, and the trees have been badly infested with black aphid. Peaches and Nectarines, on the contrary, are so far healthy and carrying average crops. The cold weather experienced from March 26 to April 2 inclusive (when the total frost registered was 78°) is responsible for the failure of the Apricot crop. Of small fruits Currants were very good indeed, but except in

sheltered gardens the Gooseberry crop was cut off by the frost. Strawberries suffered from the five weeks' drought, which commenced May 20. Both Cob Nuts and Walnuts promise an average crop, but are late. *T. Turton, Castle Gardens, Sherborne.*

— There was a good show of blossom on most fruit trees, and it set fairly well, but many Apples and Pears have dropped. Apples promise well, but will not require much thinning. Bush fruits are rather under the average, but of good quality. Black Currants are the least satisfactory, most of the buds being destroyed by birds in about two days. The Strawberry crop was a good one, but owing to the dry weather the fruit was small. Raspberries are about an average number, and there is every prospect of a good yield of Morello Cherries. Figs usually do well here, and this year is no exception. Spring frosts did very little damage, everything being very dry at the time. Aphid has been much more prevalent than usual. *J. Jaques, Bryanston Gardens, Blandford.*

— The Apple crop is good, but not so exceptional as it was last season, when many orchard trees were in danger of breaking. Pears are less plentiful than last year. Apricots are yielding better than I expected, as we had 15° of frost when the trees were in bloom, and every petal turned brown in spite of glass coping and special nets. All small fruits are plentiful, excepting Black Currants, which are badly affected with "big bud." The Strawberry crop was one of the finest we have had, the fruit being exceptionally large, although we had 5° of frost when the plants were in full bloom, but no flowers seem to have suffered. The soil is light, with clay subsoil, and the position is low and close to the River Axe. *A. Shakelton, Forde Abbey Gardens, Chard.*

— The crops on the whole may be described as good in quality and generally up to the average in quantity. Apples are rather under; doubtless due to overcropping last year. The quality is good on garden trees, but orchard trees have suffered greatly in some districts from the prolonged drought and severe attacks of aphid. Trees while in bloom have rarely looked more promising. Raspberries were a heavier crop than usual, but Strawberries were badly frozen in some districts. The quality was good, but owing to the absence of rain the fruit was smaller than usual, and the season was a short one. Plums are a much better crop than was generally expected, considering the severe aphid attacks and the heavy crops of the last season. *E. C. Parslow, County Offices, Dorchester.*

(To be continued.)

VEGETABLES.

TELEGRAPH CUCUMBERS.

I was interested in the excellent note of *G. Stretton Hall Gardens*, respecting *Cucumber Every Day* (see p. 50). I have never yet found a variety to beat our old friend *Telegraph* for purposes of utility. From a plant of the latter variety growing in a bed in the Melon house here, and having the same treatment as Melons, I have cut about 30 fine fruits which had an average length of 18 inches and 8 inches in circumference, bearing 16 fruits at the same time ready to cut. It would be interesting if *G.* would state what quantity of fruit the pot plant was bearing at the same time, if the large specimen mentioned was one of a number of other fruits or just a special one for show purposes or something of that kind. *Philip Bolt, junr., The Gardens, Stand Hall, Manchester.*

PÉ-TSAI.

THE Pé-t'ai, Chinese or Shantung Cabbage, is, I think, distinctly worthy of a place amongst our autumn vegetables, though it is not much

grown in this country. The plant has a somewhat artistic appearance in form and colour, and the blossom is a far richer yellow than that of the ordinary Cabbage and its congeners; it is totally unlike the ordinary Cabbage in foliage and habit, and, roughly speaking, may be said to resemble the *Seakale Beet*. It forms a heart somewhat like that of a *Cos Lettuce*, and may reach a weight of 5 lbs. Besides the main heart lateral hearts are often thrown out, and after cutting one or more of these may be encouraged. The seed may be sown in pan or bed, and the seedlings pricked out when ready directly into permanent quarters. I have not found that a sojourn in a nursery bed is at all advantageous. Successional sowings of a pinch of seeds should be made. If sown too early it is apt to bolt, and if too late it may not heart up before the cold weather sets in. Sow in July for cropping September to October and August for October to December. My present experience is that about the middle of August is the latest date advisable in this district, and June sowings have mostly bolted. A good rich soil and a fair amount of attention to watering should be given. I grow it on my intensive bed, which is protected from the N. and E. by walls and is well supplied with stable and artificial manures, and with bonfire ashes and lime. The plants should be not less than 18 inches apart. Should early frosts occur it is well to give some shelter with twigs or matting, or transfer them to a frame. Plants grown without protection have mostly survived the last few winters, which have been mild, but the hearts suffer. Slugs must be well trapped from the bed, or with time and inclination the evanescent soot may be used. Cropping is done either picking the tender leaves and their stalks as in the case of *Conve Tronchuda* and *Seakale Beet*, or the whole heart may be cut, when probably another heart or hearts (if not thinned) will be available. I may note here that other things, such as Cabbages and Lettuces, may be double cropped by thinning down the shoots to one after cutting. The leaves or hearts may be treated as is the ordinary Cabbage by the English cook, but are preferably given a turn thereafter, when thoroughly drained, with a little butter or gravy or stock. The flavour is delicate and more comparable to that of cooked *Witloof* than to that of ordinary Cabbage. The hearts may also be sliced and stirred up with a vinaigrette, suitably furnished with a little *ravigotte*, and served uncooked as a salad. Last autumn a guest asked what was the delightfully crisp and tender salad which was presented at table; it was Pé-t'ai. It may be remarked that in this form it is totally unlike the sliced raw Cabbage that one meets in U.S.A. under the name "cold slaw"—indeed a hard, noisome and unprofitable dish.

My first trial of the vegetable was made with a poor strain and was not very satisfactory; since then I have grown *Vilmorin's Improved*. This year I have harvested a quantity of seeds from the improved strain. *H. E. Durham, Hereford.*

VEGETABLES FOR AUTUMN USE.

INASMUCH as we have been urged officially to be abstemious in the use of meat it is desirable, at the risk of reiteration, to draw attention to the advisability of growing as largely as possible a stock of vegetables for autumn and winter use. The advice given in these columns at the outbreak of war a year ago should again be followed, and all the ground available in the vegetable quarter should be planted with snitable kinds. The advice is repeated now in order that our readers may not only follow it themselves but also urge it upon those with whom they have influence. The unthriftiness of some people is almost incredible, and although there are many owners of small gardens who make the most of them, there are, unfortunately, not a few who do not. If ever there was a time when it paid to cultivate gardens intensively that time is now.

The Week's Work.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

DAHLIAS.—All Dahlias must now be strongly staked. In sheltered positions one support may be sufficient for plants from this year's cuttings, but those from old tubers will require three, to which the now rapidly-extending growths must be looped. These plants are flowering freely, and the faded blooms must be removed unless any are required for seed, in which case the pod should be marked with a distinguishing tie. A little thinning of the shoots may be necessary on old plants, but for a garden display it ought not to be necessary on cutting plants, if suitable varieties are grown for the purpose. In poor ground a little liquid manure occasionally will be helpful. In the case of some few varieties the habit of which indicates the requirements of the plant, feeding is essential; such varieties include Chateaux Tuskar and Brentwood Yellow. Paeony-flowered, Collette and Decorative Dahlias usually become exhausted through flowering freely.

PROPAGATING BEDDING PLANTS.—Where large bedding schemes are carried out the next few weeks will be a busy time in propagating. Such plants as Pelargoniums, including Zonal-leaved, Ivy-leaved, and Cape varieties, Heliotrope, Lantana, Salvia, Tropaeolum, Coleus, Iresine, Calceolaria, Marguerite, Verbena, Fuchsia, Pentstemon, Viola, Leucophyta Brownii, and Gnaphalium microphyllum, must be dealt with as time permits, and suitable cuttings are forthcoming. Cuttings of Zonal Pelargonium will root readily in a sunny border in sandy soil, from which they can be lifted immediately they are rooted and potted. The more general method of striking these plants is in pots and boxes; in favoured localities they root best in full sunshine out-of-doors, but in colder parts it may be necessary to afford them the protection of a frame. We propagate a large number of the variety Paul Crampel singly in 4-inch pots, choosing only strong cuttings. A few of the finest plants are shifted into 5-inch and 6-inch pots in the spring, and the others planted out of the cutting pots into their summer quarters. The soil should consist of a mixture of good loam, leaf-mould, and sand; and the pots should be well drained. Our plants are never housed, being wintered in lean-to frames against plant houses, which afford a little heat, and protection is given from frost. Ventilation and watering need careful attention. This method saves time in potting and valuable house space in the spring. With the exception of Coleus and Iresine, which need a little bottom heat, and the Zonal Pelargoniums, which should be exposed for some time to the open air, the other plants mentioned should be rooted in a cold frame and shaded from sunshine. Moderate waterings and sprinklings overhead in the afternoons of hot days will soon induce roots to form. To prevent damping, remove the lights for a short time in the early mornings of fine days. Heliotropes intended to be grown as standards should be propagated from strong basal shoots inserted singly in small pots; when rooted, the plants must be kept growing steadily all the winter; the same remarks apply to Lantanas and Fuchsias. For general purposes, several cuttings in a 4-inch pot or a larger number in a box will be found convenient. In dealing with a large number of Violas and Pentstemons, root the cuttings in close frames over beds, 6 inches deep, of very sandy soil, with a few inches of coal ash and cinder at the bottom, the whole pressed firm. Viola cuttings may now be had in abundance, and many of the shoots may be obtained with a few roots attached. Stock plants of Lobelia for furnishing cuttings early next year should be clipped of the flowering growths. Choose the best specimens of good strains; when growth has recommenced lift and pot the plants for wintering indoors.

NOTE-TAKING.—The note-book should be a gardener's constant companion. Records should be made of the various parts of the garden as they are at their best. There is much to note now, as the summer bedding is at its full beauty and the borders of perennials gay with Phloxes, Pentstemons, Antirrhinums, Violas, Kniphofias, Gladioli, and annuals. Good varieties should be noted carefully, and definite arrangements made, if possible, for next year's plans. Changes in summer bedding are generally looked for yearly, and as the propagation of many plants must be undertaken now, it is necessary before commencing these operations to know approximately how many plants of each kind are required. With the present scarcity of labour in many gardens some may find it necessary to adopt a scheme which entails but little labour. For instance, Pentstemons, Antirrhinums, Violas, Calceolaria amplexicaulis, and many annuals will give a splendid return with much less labour than is necessary with Heliotropes, Lantanas, Salvias, and Pelargoniums.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCCHILD), Buckinghamshire.

APPLES AND PEARS.—These fruits, since the heavy rains of the past month, have swelled freely in this neighbourhood, and the trees appear cleaner and healthier. Attend to the stopping and removal of superfluous growths. Most of the trees are now pretty free of insect pests, and only want a few weeks' sunny weather to ripen the wood. Espalier and bush trees especially are looking promising for bearing next year, and the fruiting buds are swelling fast, the spurs of some varieties being studded with flower-buds.

FIGS.—Outdoor Figs are ripening, and no fruit seems to attract wasps so much as these. Besides destroying the nests, an excellent way of entrapping wasps is to hang bottles, partly filled with syrup and water, on poles high above the wall upon which the fruit is growing, or the bottles may be placed on the top of the wall. Most of the insects that enter the bottles get drowned in the liquid, very few finding their way out again. It is not safe to use poisonous liquids, and especially those containing arsenic, near ripening fruit, unless it is absolutely certain that the insects cannot emerge from the receptacles in which the poison is placed. The bottles should be emptied at frequent intervals, or as soon as a good catch has been secured, and fresh liquid placed in them. Do not over-water the roots whilst the fruit is ripening, nor gather the fruit before it is quite ripe, as, unlike many other fruits, Figs do not improve in flavour by being gathered before they are fit to eat. To those who contemplate planting during the forthcoming season it must be remembered that the Fig delights in a well drained, deep, light, loamy soil. If the sub-soil is not sufficiently porous drainage must be provided. Little or no manure need be added to the soil, unless it be a small quantity of quarter or half-inch bones, as these, unlike stable manure, will not cause the trees to make strong, sappy growth. The distance at which the trees should be planted from each other is for a wall 10 feet or 12 feet high, about 18 feet apart, and in favourable conditions the trees will quickly fill the intervening spaces. The trees should be either fan or horizontal shape. Some regard the horizontal trained trees as more fruitful than those trained more erect, but as a rule Fig trees quickly come into bearing, providing the wood is well ripened. In pruning and training the Fig, endeavour to have a regular supply of young wood in every part of the tree. The distance apart for each shoot should be sufficient to allow plenty of sunshine and air to reach every part; an average space of 12 or 14 inches is suitable, unless the tree be a small-leaved variety. At the end of the summer or autumn the lateral shoots generally show plenty of fruit, but these appearing so late in the year will not ripen in this country the same season, yet some of the fruit will attain to half its size, or more. Such as reach the size referred to, or even if much larger than a large Marrow Pea, will very seldom survive an

English winter. It is therefore the practice of some—and it might be generally recommended—to remove at the end of the autumn all fruits of the size described, but in most instances they might, with advantage, be removed at an earlier period, for by doing so the sap is diverted to the formation of one, or occasionally two, embryo Figs at the side of the fruit removed. These secondary fruits will be so small as to escape injury, and they will ripen well the following summer. During a severe winter the trees should be protected, and this is absolutely necessary in gardens in the colder parts of this country. Dry Bracken Fern is an excellent material to use, and can be so fixed among the branches as to afford all the necessary protection without excluding much air and light. Place a thick mulch of the same material, or strawy manure, over the roots to protect them from becoming severely frozen. The material may be removed, if needs be, early in the following spring. The pruning of Fig trees was described in the issues for March 13 and 20 last.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

BULBS FOR FORCING.—To obtain bulbous flowers early it is better to order and plant the bulbs early than to subject them to hard forcing later, as flowers that develop slowly have more substance, and last longer when cut than those that are hurried. A start may be made with White Roman Hyacinth, Paper White and double Narcissi as soon as the bulbs are received from the nurserymen, potting or boxing a sufficient number, and then following with the standard varieties of Narcissus and Tulips. Consideration should be given as to whether the plants are merely intended to furnish cut blooms or to be used as decorative plants. Where large quantities of cut flowers are required, boxes are the more suitable receptacles; they should be about 6 in. deep, and the length and width to suit the convenience of the garden. Grade the bulbs so as to place those of the same size in the same box, then the flower-spikes will be of an even size, and the appearance of the boxes improved. The box method gives excellent results, but it is an advantage to grow some of the finest bulbs in pots. In both cases the bulbs should be first covered with the soil, which should consist of good loam, mixed with plenty of sharp sand; do not use rank or half-decayed animal manures. After planting, place the boxes or pots on a well-drained bottom, and cover them with coal ashes or similar material, to the depth of several inches. Water is not usually required until after the pots or boxes are removed from the plunging material.

EUPHORBIA (POINSETTIA) PULCHERRIMA.—Plants raised from cuttings inserted late in the season should be shifted at once into the pots in which they will flower and afforded every encouragement to hasten their growth. Pots 5 inches in diameter are large enough for this late batch. Much may be done to keep the plants growing freely by feeding them with liquid manure and other stimulants. Plants of the earlier batches will soon have attained as much size as is necessary, when more air should be admitted and the atmosphere kept drier. The plants, both large and small, should stand clear of each other, for when crowded the bottom leaves may drop before the inflorescence appears, thus spoiling the effect.

WINTER-FLOWERING PELARGONIUMS.—Continue to pinch out the points of the shoots occasionally, to induce a bushy habit, and to remove all flower-buds until the end of August. By the middle of September arrange the plants in a cool greenhouse, and let them enjoy plenty of fresh air whenever the weather is favourable. If fresh batches of plants are brought under glass as required, and the temperature kept as near 50° as possible, a succession of flowers will be assured.

RICHARDIA AFRICANA (ARUM).—In gardens where the fine bold flowers of the White Arum are in demand for winter and early spring decorations some of the roots should be placed in pots. Those planted out-of-doors

during the summer give good results with little trouble. The plants should be lifted carefully, and the loose soil shaken from the roots with a view to reducing the ball to a size suitable for the pots. The root may be placed in a 5-inch pot, or two or three in larger pots, which should be well drained. Use a rich compost, as the plants are gross feeders, and need plenty of stimulants during the growing season. After potting them stand the plants in a deep pit, where they can be kept close and shaded for a short time, and syringed frequently overhead.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CARROTS.—Plants raised from seed sown a month ago with a view to producing roots for autumn and winter supplies are ready for thinning. When this work has been accomplished hoe the soil between the rows carefully and destroy all weeds. The plants will be benefited by frequent light dustings of soot during the autumn when the weather is moist.

TURNIPS.—Thin seedling Turnips as soon as they have made two rough leaves. Another sowing of Green Top Stone variety may be made at once. If the autumn is favourable the plants will form useful bulbs for use next spring, and they may be left in the ground until sharp frost sets in. Dust the rows frequently with wood ashes and soot.

ONIONS.—Lift spring-sown Onions as soon as the foliage begins to die down. The ground is so saturated with rains that second growth is almost certain to occur if the bulbs are left in the ground for too long. When the crop is lifted and the bed cleaned the bulbs should be laid thinly in rows and turned frequently until they are ready for removal to the store room, but they must not be stored until they are quite dry. The ground may then be forked over lightly and used for planting Cabbage.

VEGETABLE MARROWS.—Plants which are producing good crops may be fed with a little concentrated manure. Remove the worthless growths and decaying leaves, and cut the Marrows before they become very large.

POTATOS.—Second early varieties should not be allowed to remain in the ground after the skins are set, especially where there is any sign of disease. Lift the tubers carefully, allow them to remain exposed to the light for a few hours, and when quite dry place them in a well-ventilated shed and lightly sprinkle them with lime. No great quantity should be placed together for some time, the aim being to keep the tubers as cool as possible.

LATE PEAS.—This crop will require careful attention in staking, the rains having caused the plants to grow beyond their usual height. If new sticks are available, they should be placed in position with as little delay as possible, so that the plants may be kept in an upright position.

PARSLEY.—The earliest bed of Parsley should be cut over before the season is far advanced, in order to promote the growth of fresh stocky, green leaves. If a cold pit is available a plantation may be made from the latest sowing as soon as the plants are large enough to handle, allowing a space of one foot between the rows and four inches from plant to plant in the lines. Remove the light from the pit and only replace it when severe frost or snow threatens during the winter. A light dressing of soot may be applied to all Parsley beds at frequent intervals during the autumn.

COLEWORT.—Continue to plant Coleworts in rich soil as the borders become vacant, allowing a distance of one foot between the plants each way. Keep the hoe at work between growing crops whenever the weather is favourable. The showery weather has caused weeds to grow freely, and they should be destroyed before the season is far advanced.

MUSTARD AND CRESS.—Make weekly sowings of Mustard and Cress in a cool pit throughout the autumn; protection from heavy rain is all that is necessary for some time to come.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chesham, Gloucestershire.

NEOBENTHAMIA GRACILIS.—Although this plant is not often to be seen, it is a desirable subject for a corridor or the centre stage of a large house. It is of easy culture if given a retentive rooting medium, such as fibrous loam and leaf-mould, with a sprinkling of crushed crocks. It requires ample supplies of water at all times, and may be repotted whenever it becomes pot-bound. *N. gracilis* occasionally produces top-growths, similar to some of the *Epidendrums*. These can be removed and potted if more stock is needed, otherwise they should be cut off in the early stage, and the basal growth encouraged.

SOBRALIA.—If any *Sobralia* plants need re-potting or dividing, the present is, generally speaking, a suitable time to carry out such work, or immediately after the flowering season, when they begin to push up new growth. *Sobralias* are strong-rooting plants, and they enjoy a rich compost consisting of fibrous loam three parts, and one part peat or partly-decayed leaves, with a moderate sprinkling of crushed crocks. Much drainage is not needed, but sufficient should be given to allow water to pass through the soil freely. Firm potting must be practised, and the compost should be half an inch or so below the rim of the pot, as *Sobralias* require copious supplies of water throughout their growing period. Young plants that have filled their pots with roots may be given a pot two sizes larger, and very little disturbance of the roots will be necessary. Large examples that have exhausted the soil, and are stemless in the centre, should be carefully over-hauled and broken up into several pieces, retaining as many live roots as possible. All the dead roots and some of the old stems should be cut away, when each piece may either be potted separately or several can be placed together to form a specimen. Plants so treated must be well protected from strong sunlight and sprayed during bright weather. Other plants that may not require potting must be kept moist at the root. Some of the stems which have flowered may be removed to allow new shoots to develop. *Sobralias* ought not to be grown in a great heat or thrins will be troublesome; as a general rule the Cattleya or intermediate house will give the best results. The plants produce top-growths, which if taken off when roots are formed and potted up make healthy examples whereby the stock is increased or old, decrepit specimens replaced. A few noteworthy *Sobralias* are *S. Cattleya*, *S. Holfordii*, *S. Lowii*, *S. macrantha*, *S. Kienastiana*, *S. rosea*, *S. xantholeuca*, and the hybrids *S. Veitchii*, *S. Dellense* and *S. Amesiana*.

DIACRIUM BICORNUTUM is often included with the *Epidendrums*. The stout stems are hollow, and no doubt this fact renders the plant somewhat difficult to cultivate. Teak-wood baskets prove the most suitable receptacles, and *Osmunda* or A1 fibre with a sprinkling of Sphagnum-moss the best rooting medium. Throughout the growing season a high temperature is desirable, but when the plants are at rest they need less heat and less water at the root. *D. bicornutum* has been successfully crossed with *Laelia*, *Cattleya* and *Epidendrum*, and these hybrids constitute a very useful series. They prove more amenable to cultivation than the *Diacryas* and require similar treatment to *Cattleyas* and *Laelias*.

THE "FRENCH" GARDEN.

By P. AQUATIAS.

LETTUCES.—A batch of Cabbage Lettuces has been set in a bed 4 ft. 3 in. wide for a supply early in October, and seeds of the variety *Stanstead Park* are inserted now to form a succession. Late in August Lettuce *Little Gott* and *White Passion* will be sown for a winter supply. This latter crop is excellent for November and December trade; it requires very little attention when growing in the frames besides ventilation and occasional shelter with mats in frosty weather, providing it is grown in rich ground and in a district free from fog.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

STRAWBERRIES.—The earliest batches of Strawberries intended for forcing should now be rooting freely in their fruiting pots. Although it would be disastrous to allow the leaves to flag, water must still be supplied with care. As the pots become filled with roots the plants may be given occasional applications of weak liquid manure, varying this occasionally with soot water, which has an excellent effect on the foliage. It is essential that each plant should stand perfectly clear of its neighbour. Continue to remove runners and weeds.

VINERY.—There has been but very little sunshine during the past two months, and the later crops of Muscat Grapes have not ripened well; to enable the berries to finish ripening before the end of next month it will be necessary to employ a little extra fire-heat. Maintain a night temperature of from 65° to 70°, leaving the top ventilators open a trifle. Draw aside the leaves from the bunches, but not to the extent of exposing the berries to the full glare of the sun, which would cause them to burn. Houses containing ripe Grapes must be kept cool and airy, and where the bunches are required to hang for some considerable time it is advisable to lightly shade the roof glass, particularly during times of very bright weather; nets from the Strawberry beds will answer the purpose admirably. If the border has been mulched as advised in a previous calendar, there will be no occasion to damp the paths and other bare spaces except in very hot weather. The bunches should be examined frequently for decayed berries, and these should be removed at once. Late Vines are generally gross feeders, and the roots should be fed with liquid manure from the farmyard and the borders dusted with a concentrated Vine manure. To preserve the foliage in a healthy condition maintain a buoyant atmosphere by damping all available spaces from time to time. Maintain a night temperature of 70°, and see that the border is in a proper condition as to moisture. Young Vines planted in the spring or early summer are making rapid progress, and unless growth is very strong should be fed with a suitable fertiliser. Allow the growths to extend to their fullest length, but do not employ high temperatures, which would cause long joints and very soft wood. Endeavour to keep the foliage clear of insect pests by the frequent use of the syringe during favourable weather, and ventilate theinery freely.

FIOS.—As soon as the second crop on the early trees has been gathered, throw the house wide open to complete and ripen the growths. Thin out a number of the older shoots, and loosely distribute the younger growths, so that they may be well exposed to the sun-light, and air. Guard especially against overcrowding of the shoots. Continue to syringe the trees two or three times daily in fine weather, and see that the border is well supplied with water. Feeding the roots should be resorted to where the trees show lack of vigour. Later trees should be encouraged to complete their crops, and, should dull weather set in, employ a little more artificial warmth. As the fruits approach the ripening stage syringing overhead should be discontinued; at the same time ventilate the house more freely, leaving the top ventilators slightly open at night.

FRUIT-GROWING IN SCOTLAND.—A demonstration fruit farm has been established at Middleton, Nempflar, Lanark, under the auspices of the West of Scotland Agricultural College. A field of about two acres has been acquired, and it is proposed to utilise one acre as a model demonstration fruit plantation. It will be planted with a variety of fruits, and is intended to demonstrate varieties best suited to the district, the most suitable distances at which to plant, and the effect of different manures. In another part trees will be planted to show the influence of different stocks and the effect of pruning newly planted trees compared with those unpruned. Experiments with Strawberries form part of the scheme of work, and a plot will be reserved as a nursery for the raising of fruits.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

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

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 60.7.

ACTUAL TEMPERATURE:—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, August 19 (10 a.m.): Bar. 29.6. Temp. 65°. Weather—Bright.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, THURSDAY AND FRIDAY.—Dutch Bulbs in variety, by Protheroe and Morris, 67 and 68, Cheapside, at 10.30.

South African Ferns.*

The land of Heaths, Pelargoniums, Mesembryanthemums, and bulbous plants does not specially appeal to us as a home of Ferns, and truly it is not in the sense that New Zealand is; yet in a country so vast as South Africa there is a great diversity of climate and situation, and the Fern vegetation is greater than might have been expected. Mr. Sim is the author of several works on the Ferns of South Africa, and the present volume is a consolidation of his previous contributions to the subject, with much additional matter. The author is evidently a lover of Ferns, knows exactly the needs of the young student and supplies what is wanted with as little technicality as possible. He opens with a definition of Ferns, followed by a chapter on their reproduction and propagation. About twenty-five pages are devoted to cultivation, and this is a valuable contribution, inasmuch as the author writes from personal knowledge of his Ferns in the wild state and under cultivation. This is not a series of general instructions on Fern-growing, but a series of paragraphs on the treatment of representative genera, and even of species requiring special conditions.

Another chapter deals with the literature, nomenclature and synonymy, which the author lucidly explains, especially in relation to the multiplicity of names. He

has wisely followed Carl Christensen's *Index Filicum*, and cites all necessary synonyms.

"The Natural Home of the Ferns" is the title of an instructive chapter of service to the cultivator. Of the descriptive and pictorial parts it can be said that they are thoroughly practical and sufficient. Every species is figured, including the Selaginellas and Lycopodiums. Altogether there are two hundred and twenty species belonging to sixty-one genera, and all or nearly all of the distinct groups are represented. Among them are about a dozen filmy Ferns, and such dry-loving genera as Cheilanthes and Pellaea are numerous in species. There are two common tree Ferns, namely, *Cyathea Dregei* and *Hemitelia capensis*. Both occasionally have stems as much as 15 feet high. The former "usually grows fully exposed to the sun," whereas the latter is a forest inhabitant, never found in the open. A "General Index and Glossary" and a full "Systematic Index" constitute a guide to every source of information. Altogether this is an admirable book, complete in itself, and therefore of the utmost value to the man on the spot, without a library, and to cultivators generally. Unfortunately the price is too high for many who would gladly possess it and to whom it would be of great service.

Celery Leaf Spot.

The disease known as Celery leaf spot, and due to the fungus *Septoria Petroselinii* var. *Apii*, has been known for nearly three-quarters of a century, but it is only of recent years that it has become a serious menace to Celery crops. Some years ago the presence on the seed of spore-containing fructifications (pycnidia) was discovered, and more recently Mr. Chittenden demonstrated at Wisley that diseased seed gives rise to diseased plants. The subject has been investigated by Dr. Pethybridge, and the results of his enquiry are published in a paper entitled "The Spread of Celery Leaf Spot Disease by the Use of Affected Seed, and its Prevention."* Dr. Pethybridge and his assistants demonstrate that much of the seed on the market is affected with the leaf spot disease; out of 109 purchased samples the pycnidia of the fungus were present in 100. Let us hasten to add, however, that in many cases the spores contained in the pycnidia were dead, and attempts to raise diseased plants from such seed proved to be unsuccessful. Nevertheless, the danger of introducing the disease by sowing diseased seed is a very real one, as is shown by the fact that of the 109 samples, 14 were found to contain live spores, and further experiments with diseased seed enabled Dr. Pethybridge to confirm the discovery made by Mr. Chittenden, that diseased seed may give rise to diseased plants. The infection of the seedling appears to be due to the fact that often in germination the seed

coat containing the pycnidia is carried up at the tips of the cotyledons, and hence it is readily possible for spores liberated from the pycnidia of the seed coat to be washed down and to germinate on the seed leaf. Attempts to disinfect the seed proved successful. Of the reagents used formalin 1 part to 600 of water, and hydrogen peroxide (10 or 20 vols.) gave the best results. By soaking the seed for three hours in either of these reagents the spores of the fungus were destroyed and the seedlings showed no sign of infection; nor was the germination of the seed affected by the treatment. Of the two methods the formalin treatment should prove the more useful, not only owing to its lower price, but also because of the relative instability of hydrogen peroxide.

ORCHID RECORDS.—Mr. J. GURNEY FOWLER, at the last meeting of the Orchid Committee of the Royal Horticultural Society, announced that the Council had under consideration two new forms of entry to facilitate the recording of hybrids not sufficiently developed to warrant the award of First-class Certificates or Awards of Merit, and of rare species which may not come under the class for which the Scientific Committee now consider Botanical Certificates. Particulars of the entries and the names of the cards to be awarded have not yet been decided upon. Exhibitors will be expected to enter on the forms the fullest information available, and the proposed arrangement, therefore, should give interesting notes on plants which might otherwise escape notice.

CHINESE ICE-HOUSES SEVENTY YEARS AGO.—A short time before I left England you published in the *Gardeners' Chronicle* a number of letters and plans for the construction of ice-houses, but, as far as I can remember, nothing at all resembling the Chinese one, which I shall now describe to you. On the left bank of the Ningpo river, proceeding upwards from the town and forts of Chinghai, and in various other parts in the north of China, I have met with these ice-houses. When I inspected them for the first time, last winter (1843), their construction and situation differed so much from what I had been accustomed to consider the essentials of an ice-house at home that I had great doubts of their efficiency, but at the present time, which is the end of August, 1844, many of these houses are yet full of ice, and seem to answer the end most admirably. You are probably aware, from my former descriptions of the country, that the town of Ningpo is built in the midst of a level plain, from 20 to 30 miles across. These ice-houses stand on the riversides, in the centre of this plain, completely exposed to the sun—a sun, too, very different in its effects from what we experience in England—clear, fierce and burning—which would try the efficiency of our best English ice-houses, as well as it does the constitution of an Englishman in China. The bottom of the ice-house is nearly on a level with the surrounding fields, and is generally about 20 yards long by 14 broad. The walls, which are built with mud and stone, are very thick, 12 feet in height, and are, in fact, a kind of embankment rather than walls, having a door through them on one side, and a kind of sloping terrace on the other, by which the ice can be thrown into the house. On the top of the walls or embankment a tall span-roof is raised, constructed of Bamboos thickly thatched with straw, giving the whole an appearance exactly resembling an English haystack. And this is the simple structure which keeps ice so well during the summer months, under the burning sun of China! The Chinaman, with his characteristic ingenuity, manages also to fill his ice-house in a

* The Ferns of South Africa, containing Descriptions and Figures of the Ferns and Fern Allies of South Africa. By Thomas R. Sim. Second edition. Octavo, pp. ix. + 384, with 186 plates. (Cambridge University Press.) 1915. Price 25s. net.

* See Jour. Dept. Agric., Ireland, Vol. XIV., No. 4. July, 1914.

most simple way, and at a very trifling expense. Around the house he has a small, flat, level field, which he takes care to flood in winter before the cold weather comes. It then freezes, and furnishes the necessary supply at the door. Again, in spring these same fields are ploughed up and planted with Rice, and any water which comes from the bottom of the ice-house is conveyed into them by a drain constructed for the purpose. Of course, here, as in England, the ice is carefully covered up with a thick coating of straw when the house is filled. Thus the Chinaman, with little expense in building his ice-house, and an economical mode for filling it, manages to secure an abundant supply for preserving his fish during the hot summer months. This, I believe, is the only, or at least the principal, purpose to which it is applied in this country, and never for cooling wine, water, or making ices, as we do in Europe. It is now, I

various branches in England, Montreal, Winnipeg, Vancouver, Chicago, Los Angeles, St. Louis, and four from the Cairo branch. The *Bulletin* also contains many interesting letters from the men at the front.

— We regret to learn that Mr. WALTER EMERTON, only son of Mr. and Mrs. EMERTON, Belton Gardens, Grantham, has been killed at the Dardanelles. Soon after the commencement of the war the deceased joined the Royal Garrison Artillery, and eventually went to the Dardanelles; on July 18 he was shot by a sniper and died the following day. He was only 23 years of age.

— Private WILLIAM GLADSTONE, of the 1/4th King's Own Scottish Borderers (T.F.), reported missing at the Dardanelles, was, previous to the outbreak of war, a member of the gardening staff at Ayton Castle, Berwickshire.

known to many of our readers who have been in the habit of visiting the Shrewsbury Exhibitions, for he was ever ready to help exhibitors and others in times of temporary difficulty.

TWO INTERESTING PLANTS FROM IRELAND.—Sir JOHN ROSS-OF-BLADENSBURG sends from his gardens at Rostrevor fruiting sprays of *Coprosma propinqua*, with the information that the plant is hardy in a sheltered place, and forms a somewhat straggling bush 4 to 5 feet high and as much through. The specimen fruits freely, the white berries being very attractive. The species is a native of New Zealand. From Mr. T. SMITH, of Daisy Hill Nursery, Newry, we have received a fruiting shoot of *Fatsia horrida*, a British Columbian species, which, Mr. SMITH states, is a great pest to farmers in Canada, the spines, scratching the noses of grazing animals, causing eczema. The leaves as well as the stems are densely covered with spines, hence the spe-



FIG. 39.—TWO HYBRID CATTLEYS FROM THE SAME SEED-POD.
On the left *C. Sibyl Scintillant*; on the right *C. S. rotundo bella*.
(See R.H.S. Orchid Awards on p. 124.)

think, a question whether we could not build ice-houses at less expense, and more efficient, upon the Chinese plan than upon the old underground system common in England. *R. Fortune, Ningpo-foo. Extract from the Gardeners' Chronicle, August 23, 1845.*

WAR ITEMS.—The patriotic manner in which Britishers respond to the call to arms when needed is shown in a remarkable manner in the record of business houses having their headquarters in London. A typical case is that of Messrs. PRICE, WATERHOUSE AND CO., the old-established firm of accountants and auditors, whose principal partner in England is Mr. J. GURNEY FOWLER, treasurer of the Royal Horticultural Society, and chairman of the Orchid Committee. No. 2 of the *Staff War Bulletin*, printed by the firm for private circulation, contains the names of the men serving with the colours, many of them being officers; over seventy have joined from the

He is the twin son of Mr. GLADSTONE, gardener to LADY SIMPSON at Balabraes.

— Private ALEXANDER BONTHORNE, of the 3rd Reserve Battalion of the Scots Guards, who was killed by lightning in Kensington Gardens recently, was a member of the garden staff at Dupplin Castle, the residence of Sir JOHN DEWAR, Bart.

— Information has been received that Private JAMES ANDERSON, 1/4th King's Own Scottish Borderers, has been missing at the Dardanelles since July 12. Prior to the war Private ANDERSON was a member of the gardening staff at Thirlstane Castle, Lauder.

MR. W. W. NAUNTON.—We regret to announce that Mr. W. W. NAUNTON, one of the late secretaries of the Shropshire Horticultural Society, has sustained a sad bereavement in the death of his wife, which occurred at Abbotsford, Kingsland, on the 9th inst. Mr. NAUNTON is

cific name. The dense clusters of red fruits are attractive.

THE PACKING OF CANADIAN SHIPMENTS OF NURSERY STOCK.—In our issue for January 16 of this year Dr. C. GORDON HEWITT drew attention to the fact that according to the reports of his inspectors many consignments of nursery stock sent out by British firms are inadequately packed. The subject has naturally attracted the attention of the Horticultural Trades' Association of Great Britain and Ireland, and the President of that Association, Mr. W. CUTHBERTSON, set on foot an investigation with the object of ascertaining whether the charge is or is not valid. A letter of enquiry was sent to a number of leading exporters, and the replies have been published in the *Horticultural Advertiser*. With but one exception the replies insist that the packing is done with every care, and point to the numerous testimonials which the firms have

received in recent years to excellence of packing. Letters vindicating British methods of packing were sent by Messrs. BENJAMIN R. CANT & SONS, SANDER & SONS, W. FELL & CO., WALTER C. SLOCOCK, FINDLAY BROTHERS, GEORGE JACKMAN & SON, R. H. BATH, LTD., GEO. BUNYARD & CO., BARR & SONS, HOBBS, LTD., STUART LOW & CO., DOBBIE & CO., EDWIN HOLLAMBY, and ALEX. DICKSON & SONS, LTD. Alone among the firms circularised Mr. F. COMER WATERER, of J. WATERER, SONS & CRISP, LTD., lends support to Dr. HEWITT's criticism. He agrees to some extent with Dr. HEWITT and says that the packing of Continental stock is often superior to that of stock sent out from this country, adding that "The Continental packers pay minute attention to the smallest detail, while I have seen English stuff arrive without any attempt at packing in the proper sense. It would seem probable that the offenders—if offenders there be—are the smaller men, and that it might be worth the while of the Horticultural Trades' Association to issue—directly, or in co-operation with the Horticultural Branch of the Board of Agriculture—one or more leaflets on the proper packing of nursery stock."

PRIZES FOR RAILWAY STATION GARDENS.—The awards in the annual competition for the best-kept station gardens on the Portpatrick and Wigtownshire Railway have just been issued. They are as follows: 1st (equal), Creetown and Dalrymple; 2nd, Newton-Stewart; 3rd, Glenluce.

PRIZES FOR COTTAGE GARDENS.—For a number of years past the Countess of Selkirk, Balmae, has offered prizes for the best-kept cottage gardens in her locality. Mr. W. HUTCHINSON, gardener to C. E. GALBRAITH, Esq., Terregles, officiated as judge this season and awarded the 1st prize in the St. Mary's Isle district to Mrs. DORRANCE, Mute Hill, and the 2nd prize to Mrs. GRAHAME, Auchentouff. In the Balmae district Mrs. BOYLE, Craikness, won the 1st prize, and Mrs. CALDOW, Dromore, the 2nd.

ADMIRAL DE LA GALISSONNIÈRE, 1693-1756.—The second of a series of articles on famous amateurs, published in *Le Jardin*, deals with the distinguished Admiral de LA GALISSONNIÈRE, who defeated Admiral BYNG in 1756. In the course of his many voyages he planted vegetable seeds and fruit trees in the countries which he visited, and also brought back to France seeds obtained from those countries. His introductions were mostly from the French possessions in North America. Thus it was to Admiral de LA GALISSONNIÈRE that we owe the first introduction, in 1732, of the Tulip tree (*Liriodendron tulipifera*), of which three seeds only germinated in the Trianon Garden. He introduced also *Acer Negundo* (1735), *Acer saccharinum*, and in 1738 the red "Cedar" (*Juniperus virginiana*), raised by DUHAMEL. In 1748 he brought home seed of the swamp Cypress *Taxodium distichum*, which, however, did not grow, owing to its having been planted in an unsuitable situation; and probably about the same date the gallant admiral introduced the fine variety of Magnolia which commemorates his name—*M. grandiflora Galissonnieriensis*. In his retirement, spent in the château at Palet, near Nantes, he grew the products of his peaceful conquests, Oaks and Acers, *Ostrya virginiana*, Sassafras, Tulip tree, and many another which made the Parc de la Galissonnière celebrated among gardeners the world over. The château was burned during the war of La Vendée, the park was sold, and the trees were felled and converted into firewood.

AMERICAN GOOSEBERRY MILDEW.—Experiments carried out by Messrs. BROOKS, PETHERBRIDGE and SPINKS on Gooseberries growing on Messrs. CHIVERS and SON's Histon fruit farm indicate that spraying is not a satisfactory mode of checking American Gooseberry mildew. The varieties experimented with were Whinham's Industry and Keepsake, and although both

lime-sulphur and Bordeaux mixture were found to reduce slightly the amount of the disease their preventive effect did not in the opinion of the authors justify the cost. The remaining alternative—tipping—is recommended, although it is curious to observe that the authors, who experimented with twenty-two plots, did not reserve a plot on which to observe the efficacy of this method. They recommend that tipping should be carried out in early autumn, as soon as danger of renewed growth is past—early September being the best period. Diseased fruit should also be destroyed.

WHITE ISLAND, NEW ZEALAND.—Whakari, or White Island, in the Bay of Plenty, North Island, New Zealand, viewed from the sea, Mr. W. R. B. OLIVER informs us, is a magnificent sight. The outer slopes of the water are coloured pink, and have at their base and western end dark green patches of vegetation. From the south a portion of the sulphur-coloured cliffs within the crater is seen, while from the top of the island issue immense columns of steam, which in fine weather rest as a white cloud above. The cliffs are rather brightly coloured, yellow and red tints prevailing. A lake of greenish-yellow water, boiling in many places, stretches from cliff to cliff. The steam is heavily charged with hydrochloric acid fumes, which are highly detrimental to vegetation. Mr. OLIVER gives the results of his botanical investigations of the island in the *Journal of the Linnean Society*. Leaving out particulars of associations, the vascular plants observed were:—*Pteris incisa*, *Poa anceps*, *Deyeuxia Forsteri*, *Phormium tenax*, *Chenopodium triandrum*, *Mesembryanthemum australe*, *Metrosideros tomentosa*, *M. robusta*, *Solanum nigrum*, *Coprosma Baueri*, *Gnaphalium lateo-album* and *Sonchus oleraceus*.

A NEW NATURAL FAMILY OF FLOWERING PLANTS.—The announcement of the foundation of a new family of flowering plants is sufficient to awaken the curiosity of gardeners as well as botanists. Very few persons have seen a member of the Podostemaceae, as generally limited, in the living state, and the name even will be unknown to the majority of cultivators. The plants of this family, in the wider sense, are herbs closely attached to rocks and submerged trunks in running water. They are very dissimilar in habit, but mostly moss-like with inconspicuous flowers, and they are sparsely dispersed throughout the tropics, though relatively common in America. One species is recorded from tropical Australia, and two or three species inhabit extratropical North America. Dr. J. C. WILLIS's new family, *Tristichaceae*, published in the *Journal of the Linnean Society*, XLVIII., p. 49, is based on the genus *Tristicha* and two other small genera (previously included in the Podostemaceae), on grounds which need not be discussed here, as these very singular organisms are difficult of classification. Their present distribution is highly interesting; some of the species are apparently quite local, while others have a wide range. Thus *Tristicha hypnoides* ranges from Mexico to Uruguay, and also occurs in tropical and South Africa and Madagascar. Altogether about 150 species are on record. They grow in torrents and rapid streams, flowering with the fall of the water and germinating in the rise, the seeds adhering to the matrix by their mucilaginous testa.

PUBLICATIONS RECEIVED.—*Report on the Improvement of the Victoria Garden, Bombay.* By C. D. Mahalaxmivala. (Bombay: The Times Press.)—*Illustrations of the New Zealand Flora.* Edited by T. F. Cheeseman, with the assistance of W. B. Hemsley. The plates drawn by Miss M. Smith. In two volumes. (Wellington, N.Z.: John Mackay, Government Printer.)—*The Indian Emigrant.* Edited by T. K. Swaminathan. Vol. 1, No. 11. (Madras: 33, Broadway.) Annual subscription 10s.—*A Disease of Pines Caused by Cronartium pycnophorum.* By G. G. Hedgecock and W. H. Long. (Bulletin 247 of United States

Department of Agriculture. Washington: Government Printing Office.)—*Journal of Genetics.* Vol. 5, No. 1, July, 1915. (Cambridge University Press.) Price 10s.—*The Journal of Heredity.* August, 1915. (Washington. For circulation among members only.—*Wallrothella arceuthobii.* By James R. Weir. (Reprint from *Journal of Agricultural Research*. Washington, Department of Agriculture.)

THE MARKET FRUIT GARDEN.

A POINT FOR VEGETABLE PHYSIOLOGISTS.

DOES the mere setting of embryo fruit necessarily involve pollination? I hope that this question is not an exposure of ignorance. It is commonly supposed that if the tiniest fruitlet appears after the fall of a blossom the latter must have been pollinated. But is this certain? The extensive failure of tiny Plums to swell and stick on the trees in this and some recent seasons makes me doubt the truth of the supposition. For example, a row of Black Diamond Plums on the outside of one Apple orchard and another row of the same variety on the outside of a Plum orchard blossomed well and set many fruitlets; but not one of them matured. Now, Black Diamond is notoriously not a self-pollinator, and although some other varieties are close to it in both cases (a few Plums being grown in gaps between Apples in the Apple orchard) they bore hardly any blossom this season. Apparently, then, the blossom of Black Diamond was not pollinated, and for that reason, it may be suggested, the fruitlets all dropped.

BELLBINE IN ORCHARDS.

Surely Bellbine is the worst of all weeds in garden or cultivated orchard. Couch Grass is bad enough, but can be extirpated at some expense, whereas, so far as I know, Bellbine cannot be got rid of permanently. The present season seems to have suited the weed especially well, as there has never before been such a complete covering of an orchard on my lightest land as there has been this summer. Hoed up twice, it is coming thickly again, and must be dealt with a third time. If I had to choose land afresh for fruit planting, I would not buy any subject to Bellbine at any price.

RESULTS OF TOP GRAFTING.

The droughts of the greater parts of April, May and June were very unfavourable for grafting. To begin with, the sap was running none too freely in the latter half of April, when a large number of Irish Peach Apples in one of my orchards were topped and grafted with Bramley's Seedling. The variety is not a good one for the purpose. It is ever less sappy than Duchess of Oldenburg, the other one dealt with this year. The drying of the soil became much worse in parts of May and June, and the grafts were dried up on occasional branches, though the great majority made a good start sooner or later. The most common causes of failure, apart from the drought, were the use of scions not stout enough and insufficient care in coating over the cuts with wax. Sometimes the smear of wax, apparently covering the grafted places well when put on, is too thin to stand unbroken when dried, so that it gapes open more or less and lets drought in to the scion. It is a good plan to go over the grafts a couple of days after placing them, and to make good any cracks in the wax where a scion has died. The stock lower down has been budded since, and the buds have apparently "taken" in nearly all cases. The rains of July have helped the grafts remarkably well, and the latter have grown with such vigour that the trees begin to look well furnished. A *Southern Grower*.

[* No. It is a well-established fact that certain varieties of such fruit as Apples are parthenocarpic, i.e., they set fruits without fertilisation. For a general discussion of the subject, see *Gard. Chron.*, December 14, 1912, p. 457.]

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLI).

LES FRAISES EN ANGLETERRE.

Les premières Fraises du Hampshire se vendent jusqu'à 1 shelling la livre, mais bientôt le prix tombe à 6 et 4 pence. Le cours de 1/3 le panier de quatre livres est considéré comme satisfaisant pendant la saison.

L'emballage diffère selon l'époque à laquelle se fait l'expédition. Les Fraises de primeur arrivent en petites boîtes rondes en bois coupé. Pour en garder la fraîcheur, on les recouvre souvent de feuilles de Fraisier et les place dans des caisses à couvercle. Cet emploi de feuilles pour l'emballage est assez fréquent en horticulture; on utilise les matières que l'on a sous la main. C'est ainsi que les Pommes de terre précoces expédiées en paniers sont recouvertes de fanes, certains paniers de fruits sont fermés à l'aide de feuilles de Rhubarbe et les feuilles de Vigne sont employées pour un grand nombre de fruits de luxe. De même, aux colonies, les expéditeurs de Bananes n'ont recours qu'à la fibre pour entourer les régimes.

Fait assez curieux, la vente des premières Fraises se fait au poids, alors qu'au Continent toute transaction se fait à la caisse ou boîte. Ce procédé a certainement ses avantages car l'œil le plus exercé peut induire en erreur au sujet des dimensions d'un fruit, d'autant plus que le matériel d'emballage n'est pas uniforme; l'art de l'emballer peut aussi faire ressortir davantage un produit vendu à la pièce, et parfois même des habitués prévenus s'y font prendre.

Beaucoup de Fraises arrivent en paniers ouverts, "sieves," que le commissionnaire met à la disposition de l'expéditeur. Celui-ci y a recours parce qu'ils le dispensent de s'occuper de l'achat, ou de la fabrication du matériel d'emballage. La main d'œuvre étant rare lors de la vente, il devrait préparer ses emballages longtemps à l'avance et conséquemment y engager un certain capital. Mais au point de vue du consommateur, l'usage de ces sieves est moins recommandable car dans certains cas il sert pendant plusieurs saisons. Quand il s'agit d'un fruit de dessert dans la manipulation duquel on est en droit d'exiger tant de propreté, l'emballage "perdu," ne servant qu'une seule fois et vendu avec la marchandise, devrait être de rigueur. Or, il arrive que certains sieves ont, en dehors de la saison des Fraises, été employés pour d'autres produits. Il est vrai que l'on peut garnir l'intérieur de papier, mais ce n'est que pour les Fraises vendues aux confiseries qu'on devrait employer ce matériel.

Les envois du midi de la France (Var et Vaucluse) se font depuis longtemps en petits paniers à anse; au cours des dernières années l'emploi de ces paniers a pris également de l'extension en Angleterre. On les fait en bois coupé, très léger, et de dimensions telles qu'ils puissent recevoir, au début de la saison, 2 livres, mais plus généralement quatre ou cinq livres de Fraises. On les connaît sous le nom de "chips." Leur élasticité permet aux Fraises de résister aux manipulations. Dans de nombreux cas les expéditeurs les recouvrent d'un papier blanc très coquet, portant leur marque. De cette façon les fruits arrivent au marché, chez le détaillant et même chez le consommateur, sans avoir subi le moindre contact avec l'air. Leur propreté y gagne beaucoup et les prix permettent de regagner amplement les légers frais auxquels l'expéditeur est entraîné. Ajoutons que la vente peut se faire brut pour net et que la commission prélevée par l'intermédiaire pour location de matériel se trouve supprimée.

Aux environs de Bruxelles, on recourait assez généralement, pour l'expédition des "Barons" et "Triomphe de Gand," aux petits paniers plats en osier sur lesquels les fruits étaient entassés en pyramide, parfois aussi, pour la vente dans les rues, aux grands paniers dits à fromage. Les plaintes au sujet du manque de propreté de ce matériel ont fait adopter la caisse pouvant contenir un kilo environ de fruits. C'est un progrès incontestable, mais il s'est présenté des cas dans lesquels les caisses ont été revendues aux producteurs. Nous croyons que même pour les expéditions en province qui actuellement se font en "cageots" ou "kijkers" ces caisses pourraient avantageusement être remplacées par des "chips" à anse et recouverts d'une feuille de papier. L'arrimage de ces "chips" dans les wagons est très aisé et le client occasionnel emporte beaucoup plus facilement du marché un panier à anse qu'une caisse. Leur prix de revient n'est guère plus élevé que pour les caissettes, les maisons de gros les offrant couramment à raison de 12 ou 13 francs le cent pour une capacité de quatre livres. Un inconvénient doit cependant être mentionné. Dans les établissements d'une certaine importance les caissettes sont fabriquées en hiver, de façon à donner de l'occupation au personnel; les "chips" ne peuvent être faits que par des gens qui s'en font une spécialité.

NOUVELLES DIVERSES.

NOUVELLES DE LA GUERRE.—Nous apprenons avec le plus vif regret la mort de M. Georges Pernet, tué dans les Vosges. Son père, M. Pernet-Ducher, le rosieriste de Vénissieux, subit une épreuve terrible, son autre fils, M. Claudius Pernet, étant également tombé au champ d'honneur. M. Drevet, Joanny, horticulteur à Lyon-Monchat, porté à l'ordre du Régiment et M. Grousseau, Léon, horticulteur à Compiègne, porté à l'ordre de la Division, sont morts au champ d'honneur. Ont encore été tués : MM. Debré, horticulteur fleuriste à Paris, Desrués, Maurice, gendre de M. Lellieux, président du comité de Floriculture à la Société Nationale d'Horticulture de France et Georges, Albert, pépiniériste à Vitry.

M. FISCHER DE WALDHEIM.—Le cinquantième anniversaire de l'activité scientifique et administrative de M. Alexandre Fischer de Waldheim, directeur du Jardin impérial de Botanique de Pierre le Grand, conseiller privé, a été célébré dans la salle de l'Herbier du Jardin Botanique à Petrograd le 17/30 juin, 1915. M. Fischer jouit d'une réputation considérable dans les milieux botaniques et horticoles. Les événements n'auront malheureusement pas permis à nombre de ses amis de lui faire parvenir leur témoignage de sympathie.

L'EAU CHAUDE COMME INSECTICIDE ET FUNGICIDE.—Dans une note à la Société Nationale d'Horticulture de France, M. A. Magnien commente les essais de M. Smichon en ce qui concerne l'emploi de l'eau chaude pour la lutte contre les parasites. De nombreux insectes, des acariens, leurs oeufs seraient détruits par une pulvérisation à la température de 55 à 65°. Des cryptogames seraient déjà efficacement combattus à 50°. La mouillabilité constituerait un des principaux avantages du traitement qui se ferait sans inconvénient pour les plantes.

À L'ÉCOLE NATIONALE D'HORTICULTURE DE VERSAILLES.—Les examens de sortie n'ont pu avoir lieu, annonce *La Revue Horticole*, les

élèves de troisième année étant sous les drapeaux où ils font tous vaillamment leur devoir. Quarante six élèves ou anciens élèves sont déjà tombés au champ d'honneur. Un grand nombre d'anciens élèves ont été cités à l'ordre du jour de l'armée pour leur belle conduite devant l'ennemi, quelques-uns ont même été décorés de la Légion d'honneur ou de la Médaille Militaire.

EN HOLLANDE.—Nous apprenons que M. Camman, professeur d'horticulture de l'Etat Néerlandais pour la province de Zélande, à Middelburg, est malade. Il a obtenu un congé. L'inspecteur de l'Agriculture, M. Löhnis, a, à sa demande, obtenu démission honorable de ses fonctions; il est remplacé par M. Kakebeke, professeur d'agriculture à Goes.

LE COMMERCE HOLLANDAIS.—L'interdiction d'exporter les Pommes de terre a fait baisser les prix; l'intensité avec laquelle règne la maladie rend de plus le transport aléatoire. Le cours était, la semaine dernière, de 8 à 10 francs avec une tendance à la baisse. Les producteurs, bien que gâtés par les prix faits précédemment, se déclarent satisfaits. Les autres légumes sont toujours très chers. On cote : Tomates 40 à 60 fr. les cent kilos, Oignons 16 à 20 fr., Choux-fleurs 20 à 40 fr. le cent, Choux-cabus rouges 12 à 25 fr., Choux-cabus blancs 20 à 35 fr. L'exportation est toujours active. Il se confirme de plus en plus que la guerre, au lieu de ruiner les maraichers, leur fait traverser une ère de prospérité sans précédent. Ceux qui se sont préparés à la crise sont seuls à se plaindre. On signale que dans la région de Roelofarendsveen 20,000 tonneaux avaient été accumulés en vue du salage des Cornichons. Or l'écoulement du produit se fait avec tant de régularité que les prix ne permettent guère la mise en conserve. Les fleurs réalisent également des prix rémunérateurs, le beau produit marquant même une tendance à la hausse, chose exceptionnelle à cette époque de l'année.

OÏDIUM AMÉRICAIN DU GROSEILLIER.—Un arrêté royal du 9 juillet dernier modifie la loi relative à la lutte contre l'oïdium américain en Hollande. Les termes dans la loi : enlèvement et destruction des pousses attaquées, sont remplacés par : enlèvement et destruction de pousses de plantes attaquées ou suspectes, ce qui amènera les producteurs à tailler systématiquement toutes les pousses dans les plantations attaquées, la recherche des pousses attaquées étant très difficile.

KORT OVERZICHT VOOR DE VLAMINGEN.

De vroege aardbeziën worden verkocht in kleine ronde doozen uit gesneden hout vervaardigd. Die doozen worden gewoonlijk in kassen van deksel voorzien, ter markt geuracht. Van't begin af verkoopt men per pond, zoodat geen missig aangaande dikte of gewicht mogelijk is.

Vollegrond aardbeziën worden in ronde korven, doch meer en meer in oorkorven, insgelijks in gesneden hout, aangevoerd. Dit is zeer zuiver daar het gerief maar éénmaal gebruikt wordt en het fruit met een net stuk papier overdekt wordt. Het is ook niet duurder dan houten kistjes.

In Versailles konden dit jaar geen uitgangsexamens plaats hebben daar al de leerlingen van't laatste jaar te wapen geroepen zijn.

De Tuinbouwleeraar voor Zeeland, M. Camman, is ziek. M. Löhnis heeft zijn ontslag gegeven van Opziener van den Nederlandschen Landbouw en is vervangen door M. Kakebeke. De tuinbouwhandel in Holland blijft zeer druk.

NURSERY NOTES.

TRIALS OF ANNUALS AT READING.

ALTHOUGH the season has not been ideal for annuals, there is a deal to admire at the Reading Trial-grounds of Messrs. Sutton & Sons. The long parallel borders running from the London Road entrance across the grounds almost to the railway always attract the visitor. Here the outer rows of *Alyssum minimum*, which in an average season is so prostrate that the spreading plants seem to hug the ground, are now 6 inches high, but their floriferousness is unimpaired, and the millions of flowers diffuse a most pleasant honey-fragrance. The great decorative value of *Godetias* is here seen; the masses of flowers on such sorts as *Crimson King*, *Marchioness of Salisbury*, and *Apple Blossom* are very striking. Sutton's Double Rose *Godetia* is a splendid variety for cut flowers, although many may prefer the even more graceful spikes of *Clarkia elegans*, salmon-scarlet of vivid colouring. *Lupinus Hartwegii* and its varieties, especially *Azure Blue*, are very valuable annuals and exceedingly effective in these long borders. The dwarf *Nasturtiums* are interesting. Where the soil is of moderate quality, the plants have an excess of leaf-growth, and the fresh, green metallic leaves have a considerable value in the scheme of garden decoration. But in the "Horse Shoe," where dwarf *Nasturtiums* have been grown annually for over thirty years, the soil is poor and stony, and here, even in this moist season, leaves are at a premium, and there is a wondrous show of flowers. The value of these dwarf *Nasturtiums* for providing bright colour in places where the soil is poor and shallow has yet to be fully learnt. The massed blooms in mixed colours at Reading in full view of passengers on the G.W.R. trains provide a memorable display. Besides the well-known red and yellow sorts, there are now varieties with flowers of salmon-pink, ruby and terra-cotta colours. But perhaps the most showy of the dwarfs is *Ladybird*, which has dark foliage and boldly-marked scarlet and gold flowers. Its counterpart amongst the tall varieties is found in *Crimson and Gold*.

In another plant of great value for dry situations, the *Eschscholtzia*, there has of late been a great addition in new colours; *Ruby King*, *Rosy Queen*, *Mikado*, *Fripled Pink*, as well as the double yellow variety, are splendid acquisitions. *Lavatera trimestris Lovliness* is a great improvement in the substance as well as colour of the flower, and the crimson *Malope*, though of not quite so good a habit, is another useful plant for the flower border or for furnishing large vases. The annual *Anchusa capensis* is almost a dwarf *A. italica*, and deserves a place in every blue border. Besides these showy and fairly tall-growing annuals, there are very many dwarfer and daintier kinds which are equally valuable for decorating the flower garden. Of these the *Linums*, *Dimorphotheca* hybrids, *Sanvitalia procumbens*, which may be termed a tiny prostrate Sunflower, many *Linarias*, *Collomia coccinea*, and *Leptosiphons* are only a few of the charming little plants. The *Marguerite Carnation*, that annual variety which only a few years ago produced a small percentage of double flowers, has now given place to an immensely improved strain, which yields 80 to 90 per cent. of double flowers in great abundance within six months of sowing the seed. Many distinct colours have been fixed, so that it is now possible to ensure beds of different shades and in masses of fragrant blossom.

AT LANGLEY.

As is well known, the Sutton Trial-grounds at Langley, in Buckinghamshire, form part of the land recently occupied by Messrs. James Veitch and Sons as a fruit nursery. The soil at Langley is deeper and richer than at Reading, and herein lies much of its value, for the trials may be carried out simultaneously in two places

of opposite character, and the results noted and compared. As is only to be expected, the plants here are much more robust, but even in this moist and growing season none could fail to be impressed by the floriferousness of the various annuals. All the types of Sunflowers were taller than at Reading, but there was fully as large a proportion of flowers. It is the *Stella* type that is receiving most attention this year. This is a selection from Sutton's *Miniature*, but the flowers are larger and have long, golden-yellow petals with small dark centres. The branching habit of the *Miniature* is retained, so the *Stella* is valuable for cutting purposes. *Primrose Stella* is similar, but differs in having primrose-yellow petals. *Langley Gem* is also well represented; this is a cross between the *Red Sunflower*, which Messrs. Sutton have exhibited so well the last two years, and *Primrose Perfection*. The band of colour is not yet so definite as in the *Gaillardia Sunflower*, but its colours will appeal to many. The "band colour" is variable, but generally it is deep old-rose overlying primrose.

The many *Antirrhinums* are in great beauty. For the most part these trials are of last year's crosses, consequently the varieties are unnamed, but in the near future we shall be able to grow new and beautiful shades of colour on exceedingly floriferous plants midway in size between the present dwarf and intermediate strains. For flower garden work and for the front of the herbaceous border, there will be charming acquisitions. Away in a corner, far from the influence of other varieties, is *Antirrhinum Mauve Beauty*, a charming novelty of intermediate habit. This is evidently quite "fixed," for there were no blanks in the many rows. It will be a valuable variety for use in colour schemes. But of all the different plants on trial I was most impressed by the breadths of mixed *Phlox Drummondii*, grown as a hardy annual. The seed was sown in the open in drills 15 inches apart at the end of April. Unlike the perennial varieties, of which the seed germinates erratically, and may lie dormant for a whole year, the seed of *Phlox Drummondii* germinates fairly quickly, and the plants at Langley have grown so well that now (mid-August) the plants are quite 15 inches high and have filled their allotted space. The trusses are much larger than in ordinary strains, and the individual flowers are almost as large as those of the perennial varieties. The fourteen distinct varieties are grown separately, and also in mixture, and this last was particularly charming; the blending of the colours has been done with commendable taste, so that, although there is a sufficient proportion of scarlets and crimsons to brighten the more subdued shades, the former do not predominate.

Of the many other annuals which are so fascinating at Langley, space permits of the mention only of the dazzling *Godetia Dwarf Rose*, a superb variety, 9 inches high, and smothered with glossy pink flowers; a most brilliant dwarf *Nasturtium* named *Sunset*; *Chrysanthemum Eastern Star*, of similar habit to the well-known *Morning Star*, but bearing golden-centred yellow flowers, and a magnificent strain of *Pentstemons*, grown as half-hardy annuals. *B.*

HOME CORRESPONDENCE.

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

THE ALLIES' HORTICULTURAL RELIEF FUND.

—All will rejoice at the efforts that are being made to raise a fund for the relief of those horticulturists in the countries of our Allies who have suffered by the war. Money will be wanted in large sums if any material assistance is to be afforded to our ruined Belgian and French colleagues. Belgium will require the largest share of our help, for she has suffered most. Her present condition reminds us of the words of the poet:—

"With fire and sword the country round
Was wasted far and near,"

and when the day of her liberation from the tyranny of the invader draws nigh she will be in a condition of almost utter helplessness to restore herself, and particularly her horticultural self, to the happy state in which she existed before the war. French horticulture is not afflicted to the same extent, although the German hordes have fixed their teeth firmly into a tenth of her territory. The districts of France occupied by the enemy are rather industrial than horticultural. Yet the north and north-east of France has its victims, and no doubt when that part of France is cleared we shall find many nurseries and gardens utterly ruined for a time. The National Horticultural Society of France has already foreseen the need for help in the near future. A Commission of Enquiry has been instituted by that society, and details of all the damage done will be collected and assistance rendered so far as is possible. Our own committee will probably work in conjunction with the French one and with the Belgian authorities, and therefore all the money we can gather together will be needed. Nurserymen's homes must be rebuilt, their green-houses must be restored, their seed grounds and gardens will have to be replanted and got into order, and all this can only be done by a large expenditure of money. How can we whose country has been inviolate best help? Those who desire to do so, but whose financial resources have been or will have been strained, can help in kind. The money obtained by the fund will do much to restore the homes and nurseries and gardens, but they will require to be stocked. And it is just here that many of us can assist our Allies where we might not otherwise be able to in the same degree as others more fortunately placed. *C. Harmon Payne.*

ORCHIS HIRCINA IN SUSSEX.—It may be interesting to supplement the notes on the occurrence of *Orchis hircina* in Sussex given at pp. 77, 108, by an earlier record, possibly the one to which Mr. Burton alludes when mentioning his belief that a specimen was found in West Sussex in 1907. In the *Entomologist* for 1907, p. 300, it is stated that blooms of the Lizard Orchid found in Surrey were exhibited by Dr. G. C. C. Hodgson at a meeting of the City of London Entomological Society on October 1. Dr. Hodgson, however, informed Mr. C. E. Salmon that this should be Sussex, where it was found in the western part of the county in July, 1907 (*Journ. of Bot.*, 1908, p. 363). Mr. Salmon added, "I was shown, too, one of its flowers preserved in spirits, and photographs of the freshly-gathered plant, which now rests, in a dried condition, in the herbarium of Mr. A. O. Hume." Mr. Salmon then reviewed all the other British records known to him; these being, ten in East Kent, nine in West Kent, and one each in Surrey and East Suffolk. Shortly afterwards (*l.c.*, p. 395) Mr. H. J. Riddelsdell added the north and south divisions of Wilts, while previously Townsend had recorded a station in Hampshire (*Fl. Hamps.*, p. 339). It is doubtful whether the plant is quite so rare as generally supposed, for Mr. Arthur Bennett not long ago remarked, "This comes up every year in the neighbourhood of one of the old stations, in varying numbers (one year ten were counted), but it is very erratic as to the part of the field in which it appears. I need hardly say that a strict watch is kept over it, and the owner will not allow it to be gathered" (*Journ. of Bot.*, 1912, p. 350). I suspect that its alleged erratic appearance may be due to the fact that it is not very conspicuous when out of bloom, so that seedlings, and even established plants, would not then attract notice. It may be remembered that at the Holland House Show held in 1903 a fine inflorescence preserved in formalin, and a year later a living one, were exhibited by Messrs. G. and A. Clarke, of Dover. They were found wild in the neighbourhood of Dover. *R. A. Rolfe.*

THE FLOWERS OF MILTON.—Is it not probable that the *Myrtle* referred to on p. 89, in the issue for the 7th inst., under "Flowers of Milton," was the Sweet Gale, often called *Bog Myrtle*? This plant has a decided brown appearance in summer and autumn, and one mean-

ing of sear or sere being to wither, the quotation might mean "Ye Myrtles brown with Ivy never wither"—i.e., are not found growing together. *Fredk. C. Adams, 50, Ashley Gardens, Victoria Street, S.W.*

CATALOGUES.—For anyone who knows and loves plants a good illustrated catalogue may contain many a pleasant surprise, or solve a knotty problem as to how to utilise a favourite flower. It also kindles enthusiasm for experimenting, leads to further efforts, and assists one to make a good selection for the garden. May I, however, make a suggestion to the horticultural trade? Many readers will remember the time when a copy of *Cannells' Floral Guide* was the source of profitable and enjoyable study. The book, however, was not comparable with the present-day productions of the leading firms, who must spend large sums on their publications. To send such catalogues indiscriminately to all applicants must put an unwarranted tax on the firm's resources, and, of course, indirectly the patrons pay for them. Where a large order is sent, the expenditure is justified by the results, but in other cases the total order may not more than cover the cost of production and postage. My suggestion is that the catalogues should be charged for, according to the expenditure incurred, and where the order is, for instance, over 5s., the amount of the catalogue should be deducted. I believe this has been done in the past by some firms, but the custom has fallen out of practice. Such economy would assist the firms to maintain the high standard which the catalogues have reached, and it would enable those who, like myself, do not feel justified in sending for catalogues when the order is only likely to be a small one, to possess these valuable books of reference. *G. Lamb, Hextable.*

FERULA TINGITANA.—The adaptability of some plants to change of environment and climate is well shown by this *Ferula*. Five years ago I dug up on the Sahara Desert, south of Biskra, four or five small plants of *F. tingitana*. They have grown luxuriantly here on the East Coast of Scotland, but have never shown signs of flowering. This spring I transplanted a specimen to a more open position. It immediately reacted to the change by throwing up a spike 8 feet in height, and is now ripening (apparently) good seed. One could better understand plants grown from seed existing in a different climate, but that actual plants should suffer no inconvenience when removed from tropical conditions to this inclement climate is certainly remarkable. *Archibald Buchan-Hepburn, Smeaton-Hepburn, Prestonskirk, East Lothian.*

JAM FOR THE HOSPITALS.—The committee of Queen Mary's Hospital at Southend-on-Sea, which has since last October received as patients more than 1,700 wounded men of His Majesty's forces, ventures, now that the time of year has arrived, to appeal confidently to manufacturers and producers of jam, marmalade, and other preserves, both on a large and a small scale, generously to spare what they can of their new manufactures for the use of the patients in the hospital. This luxury would be very much appreciated, and the committee earnestly hopes for your kind assistance and co-operation. Gifts should be addressed to the secretary, H.M. Queen Mary's Royal Naval Hospital, Southend-on-Sea. *Portland.*

"WITCHES BROOM" ON THE WILLOW.—In 1906 I forwarded specimens of a moss-like growth on *Salix fragilis* to Kew and other places for identification, but without results. The tree referred to was growing by the lake-side in Regent's Park, and was then a healthy, well-developed specimen, some three-quarters of a century old. Later on the growths were noticed on three trees of the same kind growing within a hundred yards of the former, and now others quite half a mile away have been attacked. Two years ago I learnt that an insect *Eriophyes triradiatus*, not before recorded in Britain, produced these gall growths. From the frequency of its growth and wide distribution it is not at all unlikely that the trees in Regent's Park were first attacked, for I can find no reference to the insect before 1903, since which time it has extended all over the Metro-

politan area and as far out as Epping Forest. When first attacked the Willow by the lake-side in the park had only a few of the moss-like growths, but year by year they have gone on increasing until at the present time hundreds can be counted—sometimes a dozen on the same branch; indeed, so numerous are they that during the late storm several of the attacked branches were broken over. The growths are of all shapes and sizes up to 15 inches in length, and usually occur on one and two-year-old shoots, and from their deep green, moss-like appearance impart quite an interesting aspect to the trees on which they are growing. That they have a decidedly injurious effect, however, is evident from the number of dead and dying branch tips that are observable on attacked trees. Usually the branch tip dies back from the point of attack, but occasionally the same branch is the host of the growth for three consecutive years, the attacks being directed nearer the stem each season. Three species of Willow are attacked, but, curiously enough, the Sallow or Goat Willow, though growing close to affected trees, has escaped. The growths are of a dark olive-green in summer, reddish-purple in autumn, and die off almost jet black. Occasionally they remain on the trees for two years. Some experiments in the way of keeping this pest in check are in hand, and will be reported on in a year or two. *A. D. Webster.*

THE NATIONAL DIPLOMA IN HORTICULTURE.

—Now that the examinations for 1915 are over I have thought it may be interesting, and possibly helpful, to intending candidates, who have thought of entering for the Diploma Examinations, to read the experiences of one who has taken both the Preliminary and Final Examinations. The 1914 Preliminary Practical Examinations were taken at various centres, but both the Preliminary and Final 1915 Practical were taken at the R.H.S. Gardens at Wisley. Candidates for the "Final" met at Wisley on July 1 and 2, 1915, for the practical tests—the written examination having been taken on June 5. As is usual at examinations, candidates are more or less nervous, yet when we met at Wisley we were apparently a very happy party, although each candidate no doubt had his own fears as to what would be the result of the examination in his own case. At the very commencement the examiners tried to set the candidates at their ease, and by luncheon on the first day all nervousness seemed to have been dispelled, and all had settled down to work, resolved to give a good account of themselves, at the same time determined to derive as much pleasure and knowledge as possible from the various tests, the afternoon—being taken up by very interesting tests of knowledge—passing quickly enough. The tests finished for the day, our ride to Ripley was interesting, as we were enabled to exchange experiences of the day. After tea, the majority being determined to make the most of the spare evening hours, we again returned to the R.H.S. Gardens, for a visit of inspection and study. The alpine gardens being visited, and many plants of interest criticised and brought to the notice of all, rain interfering with further studies in the open, we adjourned to the glass department, where, dividing into parties, we made acquaintance with many interesting subjects, darkness putting an end to our study. We reluctantly left the gardens, the walk to Ripley giving us opportunity for helpful discussions of various items of interest to horticulturists. Meeting at 9.50 a.m. on the 2nd, each candidate again seemed determined to do his best. Having been given our papers of various operations to be performed, we soon settled down to the work allotted to us, each individual having little time to spare if he was to perform the tests in a satisfactory manner. The luncheon interval gave us a brief space for rest and refreshment, enabling us to feel ready for the afternoon's work, which again proved very interesting, the time passing very quickly, and at 5.15 p.m. we were en route for Byfleet, where we entrained for our various destinations. Having to wait a few minutes at Byfleet, each candidate appeared to regret not having done justice to himself in one or more

of the tests, but all were agreed that the visit would be long remembered, as having given us much pleasure and helpful association, and, whatever the result as to individual success or failure, we were all confident that by the preparatory study and the tests of knowledge we should be better fitted to meet the requirements of our various positions in horticulture. May I be allowed to express the thanks of all to the examiners for their kindly interest shown to us, the opinions given expression to by the candidates being that the examiners had acted with justice and kindness to all concerned, each candidate being sure that everything possible had been done to enable him to perform the work of the examinations so as to give satisfaction to himself and to the examiners. In some cases we were disappointed in our hopes of renewing friendships formed in 1914—by the absence of successful 1914 Preliminary candidates, some having responded to the call of King and Country, others being so much indirectly affected by the war that they had been unable to pursue the necessary study to enable them to take the Final this year. One can derive much pleasure in anticipating the meeting of fellow students and individual examiners at some future time—possibly again at Wisley—and thus renewing valued and helpful friendships. *W. C. C.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 17.—The exhibition, on the occasion of the fortnightly meeting on Tuesday last, though a small one, was remarkable for a first-class exhibit of vegetables from the Hon. VICARY GIBBS, staged with an effect superior to any previous effort. A Gold Medal was awarded to Mr. GIBBS and a Silver Lindley Medal for the express recognition of Mr. EDWIN BECKETT's skill in growing and staging the excellent specimens.

The Floral Committee recommended three Awards of Merit to novelties and 11 medals to collections.

The Orchids included many interesting hybrids, and the Orchid Committee awarded 3 First-Class Certificates and 3 Awards of Merit.

At the three o'clock meeting Mr. FREDERICK ENOCK delivered an address on "The Mustard Beetle."

Floral Committee.

Present: Mr. H. B. May (in the chair). Messrs. W. H. Page, J. W. Moorman, Geo. Harrow, J. W. Barr, W. J. Bean, E. A. Bowles, J. Green, G. Renthe, T. Stevenson, J. F. McLeod, J. Jennings, Chas. Dixon, A. Turner, Chas. E. Shea, J. T. Bennett-Poë, Chas. E. Pearson, G. Paul, Jas. Hudson, E. H. Jenkins, W. P. Thomson, J. Dickson and R. Cooper Pearson.

AWARDS OF MERIT.

Dahlia Patrol (see fig. 40).—A variety of the Collerette type, about 4 inches in diameter, of very regular outline and reddish-purple in colour, with lighter shade at the tips of the florets. The collar is white surrounding a gold-coloured disc.

Dahlia Geraldine Edwards.—A Ca tu variety of large size and very delicate tone—faint lilac with a sheen of gold at the base. Both shown by Messrs. J. STREDWICK AND SON.

Poterium obtusatum.—A very pretty Burnet with nodding spike, the dense, tail-like mass of flowers glowing with the bright rose-colour of the stamen filaments. The compound leaves somewhat resemble those of *Sanguisorba officinalis*. The inflorescence grows about 2 feet tall, the "plume" being about 3 inches long. We can find no reference to the species except in nurserymen's lists. Shown by Messrs. BARR AND SONS.

OTHER NOVELTIES.

Lady LEON, Bletchley Park, Buckinghamshire (gr. Mr. Cooper), exhibited a Liliaceous plant which she found growing wild in North Africa, between Biskra and Constantine. It was shown under the name *Ornithogalum thyrsoides*, but it was considered by some to be

Scilla hyacinthoides, both of which are wrong. It agrees with the description of *Urginea maritima* (Baker's *Scillacae* and *Chlorogalacae*), the plant figured in *Bot. Mag.*, tab. 918, under the name *Ornithogalum squilla*. The spike is very handsome and may be likened to a beautiful dwarf white *Eremurus*; it grows about 2 feet 6 inches long, the upper half bearing white star-like flowers with yellow capsules.

Mr. JAMES BOX, Haywards Heath, showed a form of *Dracophyllum* under the name *imbricatum*, apparently a derivative of *D. virginicum*, the synonym of *Physostegia virginiana*, but with darker flowers and more massive spikes.

Mr. J. ALLGROVE, Langley, exhibited fruiting shoots of *Podophyllum Emodii*, the scarlet, egg-shaped berries being very showy; he also exhibited *Thalictrum dipterocarpum*, one of the daintiest of plants, with loose graceful trusses of mauve flowers set off by clusters of yellow stamens.

mon type. Messrs. J. KELWAY AND SON, Langport, for *Gladioli*. This exhibit of choice varieties filled two large tables, and included the following fine novelties:—Princess Tatiana, white with faint yellow sheen at the base; Dorothy Kelway, white with rose-colour markings; Masterpiece, orange-red with deeper blotches; Golden Dawn, sulphur-yellow; Clara Butt, purple-shaded magenta; J. W. Tracey, salmon-pink marked with carmine, and Savoia, deep red shot with orange-scarlet. Mr. JOHN PIGG, Royston, Hertfordshire, for *Roses*. In the centre of the collection was a mass of Mme. Edouard Herriot, with a group of the apricot-yellow Lady Hillingdon in front. The former variety was one of the features in the spring exhibits of *Roses*, and is undoubtedly a good autumn bloomer. The beautiful pink variety Lady Alice Stanley was shown uncommonly well.

Silver Banksian Medals to Messrs. J. CHEAL AND SONS, Crawley, for hardy border flowers.

Orchid Committee.

Present: Sir Harry J. Veitch in the chair, and Sir Jeremiah Colman, Bart., Jas. O'Brien (hon. sec.), Gurney Wilson, W. Bolton, R. A. Rolfe, R. G. Thwaites, Pantia Ralli, T. Armstrong, W. Cobb, J. Charlesworth, W. H. Hatcher, J. E. Shill, C. H. Curtis, W. P. Bound, A. Dye, W. H. White and S. W. Flory.

AWARDS.

FIRST-CLASS CERTIFICATES.

Odontoglossum President Poincaré (parentage unrecorded) from J. GURNEY FOWLER, Esq., Brackenhurst, Tunbridge Wells. A noble flower of perfect form and with extraordinarily broad sepals, and petals which are light purple, with distinct pale-lilac blotches on the tips, the broad, white lip being decorated with dark purple markings in front of the yellow crest.

Odontonia Charlesworthii Fowler's variety (*M. vexillaria* × *O. Uro-Skinneri*), from J. GURNEY FOWLER, Esq. A fine advance on the original, which secured a First-class Certificate on July 14, 1914, and one of the most remarkable of hybrid *Orchids*. The spike bore large flowers with the same flat arrangement as *M. vexillaria*. Sepals and petals closely spotted with dark red-brown. Lip circular in form, deep rosy-mauve, with some white between the blotches of colour, and ruby-red band around the yellow crest.

Cattleya Hordyana His Majesty from Messrs. STUART LOW AND CO., Jarvisbrook, Sussex. One of the best and most richly-coloured forms of this showy natural hybrid. Sepals and petals bright purplish-rose, the broad lip very dark claret-purple, with yellow disc.

AWARDS OF MERIT.

Cattleya Sybil rotundo bella (*Dowiana aurea* × *iridescens*), from J. GURNEY FOWLER, Esq. —A very interesting and pretty hybrid, showing the other extreme of the handsome variety, *Scintillant*, for which Mr. Fowler received a First-class Certificate on August 4, the shape of which, with the elongated isthmus of the lip well showing, *C. bicolor*, one of the parents of *C. iridescens*. The present form has the rounded labellum of the large-flowered *Cattleyas*. The two seen together (see fig. 39) give an interesting instance of hybrid variation. The sepals and petals are yellow, with a rose tint. Lip light crimson, with a slight yellow shade, the throat being orange.

Cattleya Drapsiana var. *vinosa* (*Dowiana aurea* × *Mrs. Pitt*), from J. GURNEY FOWLER, Esq. A prettily-formed flower of fine substance. Sepals and petals deep vinous-purple. Lip crimped at the margin, dark claret-red, with orange centre, and fine lines from the base.

Laelio-Cattleya Golden Queen (parentage unrecorded), from Messrs. FLORY AND BLACK, Orchid Nursery, Slough. Flowers of perfect form, and most delicate colouring. Sepals and petals pale apricot yellow, with a faint salmon-coloured veining. Lip, broad and well-rounded, light ruby-red, changing to rose towards the margin, and having the base and centre finely veined with golden yellow.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., Brackenhurst, Pembury (gr. Mr. J. Davis), was awarded a Silver Flora Medal for a group, in which were noted *Laelio-Cattleya eximia delicatissima*, a plant with five flowers on a spike, and probably the best yet shown; *L.-C. eximia rubens*, a good dark variety; *L.-C. Primella* (*C. Dowiana Rosita* × *L.-C. Geo. Woodhams*), with dark plum-coloured labellum and rose-purple petals; *Cattleya Hardyana rubens*, with very dark lip; *Brasso-Cattleya Ilene*, and good *Cattleya Dowiana aurea*.

Mrs. BISCHOFFSHEIM, The Warren House, Stanmore (Orchid-grower, Mr. F. Jones), sent *Laelio-Cattleya Rubens* Warren House variety, with large and finely-formed flowers, bright rose, with a beautiful claret crimson labellum.

Sir HERBERT LEON, Bart., Bletchley Park, Bucks (gr. Mr. Cooper), showed *Cypripedium Transvaal* (Chamberlainianum × *Rothschildianum*), with extended petals spotted with chocolate brown.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr. Mr. Duncan), showed *Cypripedium Warnham Fairy*, in which the lower sepals were extended on each side of the labellum.



FIG. 40.—DAHLIA PATROL.

(See Awards by the Floral Committee, p. 123.)

Messrs. R. H. BATH, LTD., Wisbech, showed a rosy-scarlet variety of *Lobelia cardinalis*, the older flowers fading to clear rose colour. The name of the variety is *De Bruisen*.

Messrs. JAMES STRETTICK AND SON showed a number of new *Lobelias*. Besides the two which gained awards, the *Collette* varieties *Hornet*, a darker counterpart of *Patrol*, and *Garland*, with reflexed scarlet florets, set off by a golden collar, also the *Cactus* varieties *Sceptre*, shell-pink, and *Vanguard*, paler pink, with yellow centres and very incurving florets, are all of much merit.

Groups.

The following medals were awarded for collections:—

Silver Flora Medals to Mr. JAMES BOX, Lindfield, Haywards Heath, for border *Phloxes* and a corner group of hardy flowers. The *Phloxes* filled two long tables, and included most of the best varieties in cultivation. In the other group were many choice *Delphiniums* of the *Persim-*

Roses, *Dahlias* and ornamental trees and shrubs. Novelties included a new "Star" *Dahlia* named *Yellow Star*, of very clear tone, and with rather more florets than *Crawley Star*. Messrs. H. B. MAY AND SONS, The Nurseries, Upper Edmonton, for varieties of *Bouvardias* arranged in clumps, in a setting of choice varieties of indoor and hardy Ferns. Mr. W. MILLER, Wisbech, for hardy flowers of excellent quality. Messrs. J. PEED AND SON, Upper Norwood, for a large table of tuberous-rooted *Begonias*; and Messrs. W. WELLS, Jun., Merstham, for varieties of *Delphiniums*, arranged most attractively.

Bronze Banksian Medals to Messrs. CUTBUSH AND SON, Highgate, for a floor group of hardy border flowers; Mr. G. REUTHE, Keston, for hardy flowers and shrubs; fruiting sprays of *Berberidopsis corallina* were very handsome, as also were flowering shoots of *Eucryphia pinnatifolia* and *Escallonia argentea*; and Messrs. RICH AND CO., Bath, for hardy flowers.

Messrs. CHARLESWORTH AND Co., Haywards Heath, were awarded a Silver Flora Medal for a group of finely-grown and profusely flowered *Odontoglossums*, etc., *O. crispum xanthotes*, having four spikes, and others equally well developed. *O. Harryanum*, finely flowered and still one of the most distinct of *Odontoglossums*, was well shown, and various red *Odontiodas*.

Messrs. SANDER AND SONS, St. Albans, were awarded a Silver Banksian Medal for a group of showy hybrids, and very interesting species, among which were noted *Bulbophyllum saltatorium*, *B. barbigerum*, *B. densiflorum*, *Cirrhopetalum cornutum*, and various *Pleurothallis*, *Erias*, etc., *Brassia Forgetiana*, and a fine form of *Anguloa Cliftonii*, were also shown.

Messrs. STUART LOW AND Co., Jarvis Brook, staged a small group, in which the *Cattleyas*, and especially *C. Whitei fulgida* and *C. King Albert*, were excellent.

Messrs. HASSALL AND Co., Southgate, showed three distinct forms of their pretty *Cattleya Sybil*, varying considerably in colour.

Messrs. FLORY AND BLACK, Orchard Nursery, Slough, showed *Brasso-Cattleya Ilene Goliath*, a very large form, with rosy-lilac flowers, the broad lip rose-purple, with light yellow disc. Also a very handsome form of *Odontoglossum Smithii* (*Rossii rubescens* × *crispum-Harryanum*), with very large rose-purple labellum.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Messrs W. Bates, J. Willard, Edwin Beckett, A. Grubb, A. R. Alan, A. Bullock, J. Jaques, E. A. Bunyard, Owen Thomas and W. Poupart.

The exhibit of vegetables shown by the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Ed. Beckett) (see fig. 41), was awarded a Gold Medal and a Silver Lindley Medal for the gardener's skill in cultivating them so finely. The number of dishes was 130, the collection representing nearly every kind of vegetable grown in this country. The quality was superb, and so skilfully was the group arranged that it was the most attractive exhibit in the Hall. A portable stage, measuring 33 feet in length by 8 feet wide, was furnished with shelves at the back, on which were arranged mounds of Cauliflowers, Carrots, Celery, Artichokes, Beans, Beets and Marrows; whilst circular stands of varying heights were disposed on the base, which was sea-green in colour, and these were furnished with other subjects, skilfully disposed to give a good colour effect. A new Celery, named Aldenham White, a companion variety to Aldenham Pink, and a new Onion named Triumph, of flat shape, greenish-yellow in colour, and remarkable for its long-keeping qualities, were two fine novelties. A selection of the better-known varieties includes Carrots Favourite and New Red Intermediate; Tomatos Coronation (yellow) and Perfection; Parsnip Student; Peas Quite Content and Alderman; Marrow Table Dainty; Potatoes Duke of York and Purple Eyes; Onions White Leviathan, Cranston's Excelsior and Ailsa Craig; Cucumbers Sensation and Model; Beets New Purple, Crimson Globe and Intermediate, the latter a useful type between the round and long varieties; Cauliflowers Snowdon and Autumn Giant; and Prizewinner and Chelsea Giant Runner Beans. There were also white and purple Aubergines, Scorzoneria, Salsify, Sweet Corn, Capsicums, Radishes, Cress, Endive and other kinds.

Several novelties were submitted to the Committee for awards. Mr. J. W. IRVINE, St. James's Gardens, West Malvern, showed two seedling Melons; the better-flavoured fruit was named Malvern Gem, but both specimens were over-ripe. Mr. J. E. Westmore, St. John's Road, Wroxbhall, showed a new Pea named Surprise. Mr. J. C. ALLGROVE, Nurseryman, Langley, showed Apple St. Everard; the shape and size much resembles Cox's Orange Pippin, but the skin is a deeper red. The flesh is firm and of good flavour. Messrs. LAXTON BROS., Bedford, showed a new Plum named Laxton's Utility. In appearance the fruit resembles a dull-red culinary variety, but the flavour is excellent and very sweet. The Committee expressed a wish to see the tree.

Messrs. S. BIDE AND SONS, Farnham, showed

a new Tomato named The Recruit. The variety is a remarkable cropper, some of the bunches having thirty to forty excellent fruits of an aggregate weight of 4lb. to 5lb.

PERPETUAL-FLOWERING CARNATION. REGISTERED VARIETIES.

The following varieties have been registered with the P.F.C.S. during the past half-year. The descriptions are those supplied by the society's secretary:—

General Joffre.—Scarlet sport from Lady Northcliffe, by Mr. G. CLARKE, Leighton Buzzard.

Chelsea.—Seedling, white, pencilled with pink, by Mr. A. F. DUTTON, Iver.

King Albert.—Seedling, deep satin-pink, by Mr. A. F. DUTTON.

Lord Kitchener.—Seedling, purple, striped with crimson, by Mr. E. H. COLEMAN, Bognor.

King of the Belgians.—Seedling, deep crimson, by Mr. E. H. COLEMAN.

Peace.—Pure white sport from Lady Meyer, by THE NEWPORT NURSERIES, Essex.

Louvain.—Seedling, bright rosy-salmon, by Mr. A. F. DUTTON.

Mrs. W. L. Ainslie.—Seedling, salmon pink, by Mr. W. HEMES, Hanworth.

Flaming June.—Sport from Mikado, geranium-crisse, by Messrs. YOUNG AND Co., Cheltenham.

liana alba, *Laelio-Cattleya*, a few *Odontoglossums*, *Odontiodas* and others.

J. LEEMAN, Esq., Heaton Mersey (gr. Mr. S. Smith), was also awarded a Large Silver Medal for a group of *Cattleyas*.

O. O. WRIGLEY, Esq., Bury (gr. Mr. E. Rogers), staged fine examples of *Phalaenopsis Rimestadiana* (1st C.C.), *Lycaste tricolor albens* (1st C.C.), *Anguloa eburnea*, *Miltonia vexillaria*, *Maxillaria grandiflora* and *Disas grandiflora* and *aurea*.

Messrs. A. J. KEELING AND SONS, Bradford, staged *Miltonia Queen Alexandra*, *Cypripedium Goweri magnificum* (Argo-Lawrenciae), *Bulbophyllum Lobbii* and other plants.

FIRST-CLASS CERTIFICATES.

Laelio-Cattleya Mrs. Harold King (L.-C. *Epicasta* × L.-C. *Calistoglossa*), a large, well-set flower of good shape and substance, lip well rounded, deep purple. From Mrs. R. LE DOUX.

Miltonia vexillaria Lecana, a magnificent variety, spike carrying eight flowers, bottom flower 4½ in. across and 5½ in. deep. From W. R. LEE, Esq. A Silver Medal was awarded in addition.

AWARDS OF MERIT.

Odontoglossum Lambeauianum var. "*violaceum*" (a home-raised seedling), and *Lycaste Arthurianum* (Plana × *Balliae*). Both from R. ASHWORTH, Esq.



FIG. 41.—VEGETABLES EXHIBITED BY THE HON. VICARY GIBBS AT THE R.H.S. MEETING ON TUESDAY LAST.

Souvenir.—Seedling, pale rose-salmon, by Messrs. YOUNG AND Co.

Shepherdess.—Seedling, rich salmon, by Messrs. YOUNG AND Co.

Golden Flag.—Seedling, yellow, pencilled with red, by Messrs. YOUNG AND Co.

Mrs. J. L. Cross.—Sport from R. F. Felton, pink, flaked with deeper tint, by Mr. W. J. DOUCE, Calthorpe Tower Gardens, Rugby.

PROVISIONAL REGISTRATION.

Averill Furness.—Sport of R. F. Felton, blush, suffused and flaked with rosy cerise, by Mr. R. BARNETT, Grantley Hall Gardens, Ripon.

Arrangements for the show on December 8 are now in hand, and the schedules will be published as soon as possible.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 22.—Committee present: Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. J. Bolton, J. C. Cowan, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, J. Lupton, D. McLeod, S. Swift, H. Thorp and H. Arthur (secretary).

Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton), was awarded a Large Silver Medal for a group composed principally of *Cattleyas*, including a fine batch of *C. Gaskel-*

CULTURAL CERTIFICATES.

To Mr. ROGERS, gr. to O. O. Wrigley, Esq., for *Phalaenopsis Rimestadiana* and *Lycaste tricolor albens*.

To Mr. J. LUPTON, gr. to Col. J. Rutherford, M.P., for *Cattleya Gaskelliana albens*.

SCOTTISH HORTICULTURAL.

AUGUST 3.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on the 3rd inst. Mr. Pirie, the president, was in the chair, and there was an attendance of fifty members.

The evening was devoted to the reading of the premeditated papers in the juniors' competition for short essays on subjects of their own selection. Owing to the war the number of papers sent was fewer than last year. The 1st prize, a Gold Medal, was awarded to Mr. WALTER FLEMING, Mount Melville Gardens, Fife, for a paper on "The Cultivation of the Potato"; the 2nd prize was won by Miss MAY B. WHITE, Edinburgh, her subject being "Insect Pests on the Apple"; 3rd, Mr. JOHN G. KERR, Balcaldine Gardens, Ledaig, Argyllshire, for a paper on "The Potato." The judges were Messrs. J. S. Chisholm, Edinburgh and East of Scotland College of Agriculture, and J. H. Highgate, Hopetoun Gardens, S. Queensferry.

The chairman referred to the loss which the association had sustained in the death of ex-Bailie Mackenzie, one of its former presidents, and it was agreed to record this in the minutes, and to send a letter of condolence to his widow and family.

The exhibits were: New type of Fancy Pansy and collection of Single and Double Pelargoniums, from Messrs. DOBBIE AND Co., Edinburgh; collection of Roses, from Messrs. DICKSONS AND Co., Edinburgh (Cultural Certificate); Larkspur, Roses, Sweet Peas, Spiraea venusta and Erythrina Crista-galli, from the EDINBURGH PUBLIC PARKS DEPARTMENT, per Mr. M'Hattie (Cultural Certificate); Sweet Peas, from Miss BURTON, New Saughtonhall, Bolton (Cultural Certificate); Strawberries Givon's Late Prolific (average weight of berries 2½ ounces) and King George, from Mr. R. CAIRNS, Murieston, Mid Calder (Cultural Certificate).

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

AUGUST 9.—The monthly meeting of this society was held at the R.H.S. Hall on Monday, August 9, Mr. Chas. H. Curtis in the chair. Three new members were elected; one member withdrew £2 14s. 10d., being double the amount of interest. The sum of £74 6s. 9d. was passed for payment to the nominee of a deceased member, and one member was granted 5s. a week for life from the Distress Fund. The sick pay for the month on the ordinary side amounted to £56 10s. 3d., on the State Section £24 15s., and maternity claims to £12. Two hundred and ten members are now serving with H.M. Forces.

LAW NOTE.

DISSOLUTION OF PARTNERSHIP. MESSRS. WHITELEGG AND PAGE.

George Gibbon Whitelegg and Charles Herbert Page, The Nurseries, Chislehurst, Kent, from July 31, 1915. All accounts, debts, etc., due to the above late firm have been taken over by the said George G. Whitelegg, who is carrying on the business.

FRENCH NOTE.

HARICOT DE SOISSONS.

SOISSONS is famous the world over for the excellence of its Haricots. Throughout the surrounding region all the little villages now so sorely tried carried on the cultivation of the branched white-seeded Haricot of Soissons. The Haricot requires a genial but not too hot a climate (for under a powerful sun the pod loses its softness and the seed becomes hard) and a light, sandy, fertile soil. In cold, clayey soils the seed-coat becomes thick and the seeds small and less white. Nor does the variety thrive in the moist valleys or high plateaux, for it does not like the cold rains of May and autumn, nor great drought in summer. It is a greedy plant and should not be grown a second time on the same piece of ground, but should be planted in fresh soil, well worked and manured. Its cultivation, according to Gihault, dates back for more than a century, and already in the time of the Revolution a large export trade was carried on with it. The following details of cultivation are given in M. Lambin's bulletin of the Soissons Horticultural Society. Seed—preferably of the previous year's saving—is sown on May 3 to 10, and the growers hold that the first ripened—that is, the seed from the lowest part of the plant—gives the most fertile plants. Seed is sown in holes 2 to 2½ inches deep, drilled about 1 yard each way from one another, and they are sometimes, as at Vailley, interplanted between Vines. The crop is cut fresh or dry. In the latter case the plants are cut down in September an inch or two from the base, left to dry, the haulms carried to a store, threshed and sorted.

MARKETS.

COVENT GARDEN, August 18.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters, white, per doz. bun.	3	6	Lily-of-the-Valley, per doz. bunches—cont.	10	0-13
—pink, per doz. bun.	2	0	—special	15	0-13
—purple, per doz. bun.	3	0	—ordinary	—	—
—mauve, per doz. bun.	3	0	Marguerites, yellow, per doz. bun.	1	6
Carnations, per dozen blooms, best American varieties	0	9	Orchids, per doz.:	—	—
—smaller, per doz. bunches.	4	0	—Cattleya	10	0-12
—Carola (crimson), extra large	1	6	—Harrisonia	4	0
—Malmesbury, per doz. blooms	4	0	—Odontoglossum crispum	2	6
—pink	4	0	Pelargonium, per doz. bunches, double scarlet	4	0
Chrysanthemums, white, per doz. blooms	2	0	—white, per doz. bunches	4	0
—Yellow, per doz. blooms	1	6	Physalis, per doz. bunches	6	0
—White, per doz. bunches	6	0	Roses: per dozen blooms, Bride	1	0
—Bronze, per doz. bunches	5	0	—Duchess of Wellington	—	—
—Yellow, per doz. bunches	5	0	—Général Jacqueminot	0	4
Eucharis, per doz. 20-26	—	—	—minot	0	9
Gardenias, per box of 15 and 18 blooms	1	6	—Joseph Lowe	—	—
Gladioli:	—	—	—Lady Hillingdon	0	9
—Brenchleyensis, per doz. spikes	1	0	—Liberty	1	0
—The Bride (white)	2	6	—Madame A. Chateaux	0	9
—America, per doz. spikes	1	0	—Melody	0	9
—Halley (salmon), per doz. spikes	1	0	—My Maryland	0	9
—Pink Beauty	0	9	—Niphetos	0	9
Gypsophila, paniculata, double, per doz. bun.	4	0	—Prince de Bulgarie	—	—
Lapageria, per doz. blooms	1	6	—Richmond	0	9
Lilium longiflorum, per doz., long	4	6	—Sunnburst	1	0
—short	4	6	—White Crawford	1	0
—lancifolium album, long	1	6	Seabiosa caucasica (mauve), per doz. bun.	1	6
—short	2	0	Spiraea, white, per doz. bunches	—	—
Lilium lancifolium rubrum, per doz., long	1	6	Statice, mauve, per doz. bun.	3	0
—short	0	9	—white and yellow, per doz. bun.	3	0
Lily-of-the-Valley, per dozen bunches:	—	—	Stephanotis, per 72 pips	1	0
—extra special	21	0	Stock, double white, per doz. bun.	4	0
	24	0	Sultan, white, mauve, yellow, per doz. bun.	2	0
			Tuberose, per packet, 24 blooms	0	4
			Violets, per doz. bunches	1	6
			White Heather, per doz. bunches	6	0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.				
Adiantum Fero (Maidenhair) best, per doz. bunches ..	3	0	5	0	Fern, French, per doz. bunches..	0	6	0	8
Agrostis (Fairy Grass), per doz. bunches ..	2	0	4	0	— common ..	3	0	4	0
Asparagus plumosus, long trails, per half-dozen ..	1	6	2	0	Galax leaves, green, per doz. bun.	2	0	—	—
— medium, doz. bunches ..	12	0	18	0	Grasses, various, per doz. bun.	1	6	2	6
— Sprengeri ..	6	0	12	0	Hardy foliage, various, per doz. bun.	4	0	8	0
Carnation foliage, doz. bunches ..	3	0	6	0	Lichea Moss, per doz. boxes ..	10	0	12	0
Croton foliage, doz. bunches ..	12	0	16	0	Moss, grossa bunches ..	8	0	—	—
Cycas leaves, per doz. ..	—	—	—	—	Myrtle, doz. bnchs. English, small-leaved ..	6	0	—	—
Eulalia japonica, per bunch ..	1	0	1	6	— French, per doz. bunches ..	1	0	1	3
					Smilax, per bunch of 6 trails ..	1	0	1	6

REMARKS.—Prices for Liliums are exceptionally high for the time of year, and especially for Lilium longiflorum. All flowers from out-of-doors have suffered from the frequent rains, especially white Asters, for which there is a good demand. All white flowers have advanced in value. Good Roses are scarce; the better varieties are Mine, Abel Chateaux, Climbing Liberty, Molly Sharnau Crawford (white), and Melody (yellow). There are large supplies of coloured Gladioli, including G. Brenchensis, and the varieties America, Halley and Pink Beauty. Sweet Peas are nearly over. The supply of Chrysanthemums, for which there is a

good demand, is gradually increasing, and the flowers are arriving in a better condition than hitherto. The disbudded varieties are Countess (white) and Mercedes (yellow). Roi des Blancs is the best spray white, whilst of coloured varieties Verona (bronze), Carrie (yellow) and Horace Martin (yellow) are the best. Of Orchids, Cattleyas are more plentiful, Odontoglossums are scarce, and there are a few good Cypripediums. Physalis is available, and a few English Violets are also on sale.

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

	s.d.	a.d.		s.d.	a.d.
Aralia Sieboldii, dozen	4	0	6	0	12
Aracaria excelsa, per dozen	18	0	21	0	10
Asparagus plumosus vauus, per dozen	10	0	12	0	4
— Sprengeri	6	0	8	0	2
Aspidistra, per doz.	18	0	30	0	6
— variegated	30	0	60	0	2
Asters, in 48s., per doz.	3	0	5	0	6
Cacti, various, per tray of 15s	4	0	—	—	18
— tray of 12s	6	0	—	—	6
Campanula isophylla, 48s., per dozen	6	0	8	0	36
— alba	6	0	8	0	24
Chrysanthemums, in 48s., per doz.	8	0	10	0	24
Cocos Weddelliana, 48s., per doz.	18	0	30	0	5
— 60s., per doz.	8	0	12	0	5
Croton, per dozen	18	0	30	0	36
Dracaena, green, per dozen	10	0	12	0	48
Ferns, in thumbs, per 100	8	0	12	0	4
— in small and large 60s	12	0	20	0	4
— in 48s., per dozen	5	0	8	0	—
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REMARKS.—Chrysanthemums and Asters are marketed in fairly large quantities, but the largest stocks in this department are of Palms and Ferns. Business is very quiet, there being but little demand for pot plants.

Fruit: Average Wholesale Prices.

Apples—	s.d.	s.d.	Grapes, Muscat,	s.d.	s.d.
— English cooking, per bus. . .	2	0	6	0	8
— Dessert, per ½ bus. . .	2	0	5	0	14
Bananas, bunch: . .	—	—	—	—	—
— Medium . .	7	6	—	—	—
— X-medium . .	8	6	—	—	—
— Extra . .	9	6	—	—	—
— Double X . .	10	6	—	—	—
— Giant . .	11	0	14	0	—
— Red, per ton . .	£20	—	—	—	—
— Jamaica, p. ton . .	£13	—	£14	—	—
Cherries, Morello, ½ sieve . .	7	0	10	0	—
Cobnuts, per lb. . .	0	4	0	4	—
Cornicobs, per doz. . .	2	0	2	6	—
Figs, per doz. . .	1	0	4	0	—
Grape Fruit . .	26	0	30	0	—
Grapes: English, Black, per lb. . .	0	6	1	6	—
— Almeria, per bbl. of 60 lbs. . .	12	0	—	—	—
— Canon Hall, per lb. . .	2	0	4	0	—
— Lisbon, per box 34 doz. lbs. . .	8	6	—	—	—

REMARKS.—The supplies of English Apples, both of cooking and dessert varieties, are increasing daily. English and Continental Pears, Plums and Greengages are plentiful. A few Raspberries are still available, but Currants are over. Morello is the only kind of Cherries still on the market. The supplies of Peaches and Nectarines exceed the demand; Melons and Figs are plentiful. All varieties of Grapes are arriving in large quantities. The first consignments of Cobnuts are to hand. E. H. R., Covent Garden, August 18.

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.				
Artichokes, Globe, per doz. ..	1	6	2	6	Mustard and Cress, per dozen pun- nets ..	0	10	1	0
Aubergines, per doz.	2	0	2	6	Onions, per cwt., Foreign ..	3	6	5	0
Beetroot, per bus.	3	6	—	—	— green, per doz. bunches ..	2	0	3	0
Cabbage, per tally	2	6	8	0	— Valencia, per case ...	7	6	8	6
Carrots, per cwt.	5	0	—	—	Peas, per bus.	3	0	6	0
Cauliflowers, per doz.	4	0	5	0	Radishes, per doz. bunches ..	1	0	1	3
Cucumbers, per doz.	2	0	3	0	Scarlet Runners, per bushel ..	1	0	2	0
Garlic, per lb.	1	0	1	6	Shallots, per doz.	1	0	2	0
Herbs, per doz. bunches ..	2	0	6	0	Spinach, per bus.	3	0	3	6
Leeks, per dozen ..	1	6	2	0	Tomatoes, English, per doz.	2	0	3	0
Lettuce, Cabbage and Cos, per doz.	1	0	2	6	Turnips, per cwt.	4	0	4	6
Mushrooms, cul- tivated, per lb.	1	6	2	0	Vegetable Marrows, per tally ..	2	0	3	0
— Buttons ..	1	6	2	0	Watercress, p. doz.	0	4	0	6
— Outdoor, per ½ bus.	—	—	—	—					

REMARKS.—Large quantities of Tomatoes are arriving daily. Cauliflowers and Peas of good quality are scarce. All other seasonable vegetables are plentiful. E. H. R., Covent Garden, August 18.

New Potatoes.

s.d. s.d. s.d. s.d.

Bedfords—	Kents—		
Puritans 3 6-4 0	Puritans 3 9-4 3		
Epicures 3 6-3 9	Eclipse 4 0-4 3		
Eclipse 3 9-4 3	Sharpe's Express 4 0-4 3		
Blackland 3 3-3 9	Lincolns—		
	Queens 3 6-4 0		
	Epicures 3 3-3 9		
	Eclipse 3 9-4 0		

REMARKS.—Trade is still slow and the supplies are equal to the demand. Unfortunately, some tubers are showing signs of disease. *Edward J. Neuborn, Covent Garden and St. Pancras, August 13.*

THE WEATHER.

WEATHER IN WEST HERTS.

Week ending August 18.

Warm, Calm, and Sunny.—The days of the past week were, with one exception, warm for the time of year, and also most of the nights, but at no time did the temperature in the thermometer-screen rise above 71°. The ground is at the present time at a reasonable temperature both at 1 foot and 2 feet deep. Some rain fell on four days, and to the total depth of half an inch. During the week nearly a gallon of rainwater has come through the bare soil percolation gauge, but none has come through that on which short grass is growing for a fortnight. Both gauges are a yard square and 2½ feet deep. The sun shone on an average for eight hours a day, which is two hours a day longer than is usual in August. Calms and light airs alone prevailed during the week. On the last day, the 17th inst., the total velocity for the twenty-four hours was only nine miles—making this, with two exceptions, the calmest day in August during the twenty-nine years over which my records at Berkhamsted extend. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a reasonable quantity for that hour by 3 per cent. *E. M.*

GARDENING APPOINTMENTS.

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

Mr. Alfred Jakeman, for four years Foreman at Holkham Hall Gardens, Norfolk, as Gardener to J. MEEGLAHLIN, Esq., Rockhurst, West Hoathly, Sussex.

Mr. F. W. Shemming, previously Foreman at Parkwood, Englefield Green, Surrey, Leyswood, Groombridge, Sussex, and Heacham Hall, Norfolk, as Gardener to J. CHAMBERS, Esq., Elstree, Redhill, Surrey. (Thanks for 1s. for R.G.O.F. box.—EDS.)

Mr. G. H. Akerman, for the past 6 years Gardener to P. F. WIGAN, Puckrup Hall, Tewkesbury, as Gardener to Viscount GORT, Caversfield House, Bicester, Oxfordshire. (Thanks for 1s. for R.G.O.F. box.—EDS.)

Mr. W. Collis, for the past 12 years Gardener at Grove Lodge, Muswell Hill, London, as Gardener to PERCY HONRI, Esq., at Cromwell Hall, East Finchley, London. (Thanks for 1s. 6d. for R.G.O.F. box.—EDS.)

Mr. Charles Hill, for the past 5½ years Gardener to R. S. BODEN Esq., Aston Lodge, Derby, as Gardener to Lady HEPTON, Newton Green Hall, Leeds.

DEBATING SOCIETIES.

WATFORD HORTICULTURAL.—The usual monthly meeting was held on the 10th inst., at the Friends' Meeting House. Mr. H. Newman presided. The evening was devoted to questions, which were very ably answered by Messrs. J. Leslie and W. B. Kettle.

CATALOGUES RECEIVED.

Bulbs.

DICKSON, BROWN AND TAIT, 57, Cross Street, Manchester. FISHER, SON AND SIBRA, LTD., Handsworth, Sheffield. ROBERT SYDENHAM, LTD., Teuby Street, Birmingham. ALFRED DAWKINS, Chelsea.

JOHN WATERER, SONS AND CRISP, 10, The Arcade, Liverpool Street, London.

BROWN AND WILSON, 10, Market Place, Manchester.

KENT AND BAYDON, Darlington.

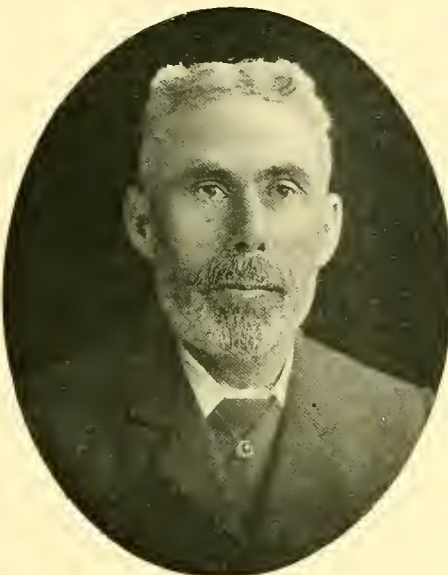
W. DRUMMOND AND SONS, LTD., Stirling.

Miscellaneous.

JOHN WATERER, SONS AND CRISP, 10, The Arcade, Liverpool Street, London.—Roses, Fruit Trees.

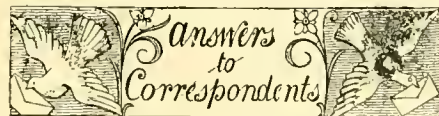
Obituary.

ARTHUR YOUNG.—The death of Mr. Arthur Young, gardener at Witley Court, Worcestershire, was announced in our last issue. We now print the following particulars of his career, kindly forwarded by Mr. William Crump, Madresfield Court Gardens, whose friendship with deceased has been uninterrupted during the past thirty years. "Arthur Young was born at Becket House, Shrivenham, in 1856, where his father was head gardener to Viscount Barrington. He commenced work at an early age, and by the time he was 22 he was foreman under the late Mr. James Douglas at Loxford Hall. Two years later he became head gardener to Earl Chesterfield, Holme Lacy, Hereford, where cordon Pears and other fruits were specialties. His next move was to Abberley Hall, Worcestershire, where he stayed nine years. From Abberley Hall he removed to Witley Court, the residence of the Earl of Dudley, and he continued his devoted service there to the end. Mr. Young was chairman of the Parish Council, school manager, and church warden, and a most energetic committeeman of the Gardeners' Royal Benevolent Institution, Worcester Auxiliary, from its



THE LATE MR. ARTHUR YOUNG.

commencement. He was laid to rest in the quiet little graveyard of Witley, and the funeral was attended by the Countess Dudley, the Ladies Ward and other members of the family (the Earl being at the front), and a very large number of friends, including a deputation from the Worcester Auxiliary of the Benevolent Institution and several other public bodies. Mr. Young leaves a widow, one daughter, and two sons, one of whom is in the Army."

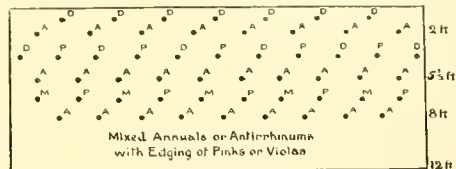


ASPIDISTRA LEAVES: *H. T.* The injury is due to stagnant water at the roots. A plentiful supply of water is requisite, but the drainage must be good.

CARNATION LEAVES TURNING BROWN: *Constant Reader.* The Carnation plants are not diseased, but their failure is due to cultural treatment—too much moisture or an excess of stimulant.

FLOWER BORDER: *E. C. V.* The dimensions of your border are 10 yards long by 12 deep. We assume you mean that it is 10 yards

long by 12 feet deep. The partial shade caused by the Sequoia will not be a serious drawback. As you desire the main scheme to be rows of Michaelmas Daisies we advise you to plant three rows of these, the first 2 feet from the back, the second 5½ feet, and the third 8 feet. This will leave a good frontal margin for annuals or other plants. The back row of Asters, of tall and strong growers, should be planted 4 feet apart, the row taking seven plants. For the other two rows 3 feet between the plants will suffice. At the extreme back of the border, behind the spaces



of the Asters, there will be room for seven plants of Delphiniums, or, if preferred, Delphiniums and Kniphofias alternately; the Delphiniums will rise above the Asters and give a display in June and July, and a small percentage of bloom later if the faded flower-spikes are removed and the plants fed with manure water. Between the back and second row of Asters, Delphiniums and Phlox decussata in variety planted alternately and at the same distance apart as the second row of Asters would continue the colour through August. Between the second and third or front row of Asters alternate clumps of Montbretia and Phlox would give a gay colour tone. The space still available at the front of the border, namely 4 feet deep, will be partly taken up by the Asters, leaving 3 feet for annuals or, if you prefer, Antirrhinums, or Pentstemon Middleton Gem, with an edging of Pinks or Violas. This 4 foot front could be utilised for spring-flowering plants, such as Wallflowers, Polyanthus or Myosotis, among which and through the whole border could be planted bulbs of Tulips of the early-flowering and May-flowering types. You may also plant freely through the front 8 feet of the border late-blooming Gladiolus and Hyacinthus candicans. The Tulip bulbs could be lifted when finished blooming and laid in soil to ripen, and the Gladiolus and Hyacinthus, or Galtonias, before winter. When the Phlox and other subjects have finished blooming the staking of the Asters will be of great importance, and if done well will hide much of the somewhat untidy appearance of Phlox and Delphinium stems. With proper attention your border will give a bright display of bloom, with a few short intervals from spring to autumn. We append lists of varieties:—

ASTER—BACK ROW.			
1. Moonstone (Grey white)	2. Rev. Wilks (Maue)	3. Beauty of Colwall (Double blue)	4. White Climax (White)
5. Climax (Blue)	6. Lil Fardel (Pink)	7. Coombe Fishacre (Flesh)	

ASTER—SECOND ROW.			
1, 2. Diana (Mauve)	3, 4. St. Ewain (Pink)	5, 6. Nancy (Blue)	7, 8. Maidenhood (White)
9, 10. Feltham Blue (Blue)			

ASTER—THIRD ROW.			
1, 2. Ideal (Mauve)	3, 4. Hon. V. Gibbs (Pink)	5, 6. Gracillimus (White to pink)	7, 8. Dan Clarke (Blue)
9. Delight (White to pink)			

DELPHINIUM—BACK.			
1. Florence (Cambridge blue)	2. Rev. E. Lascelles (Dark blue and white)	3. Moerhelmi (White)	4. King of Delphiniums (Gentian blue)
5. Nympha (Azure)	6. Francis F. Fox (Dark)	7. Concoris (Rosy mauve)	

DELPHINIUM AND PHLOX—SECOND ROW.			
1. Delphiniums	2. Persimmon	3. Amphion	4. Duke of Connaught
5. Phlox Gen. von Hentz (Salmon red)	6. Frau Buchner (White)	7. Coquelicot (Orange scarlet)	
8. Delphiniums Mr. J. S. Brunton		9. Candidat	
10. Phlox Eclairneur (Carmine)		11. Paul Bert (Violet blue)	

PHLOX AND MONTBRETIA—THIRD ROW.

2. Phlox Elizabeth Campbell (Light salmon)	4. Selma (Light pink)	6. Antonin Mercie (Lavender)
8. Phlox Flambeau (Fiery red)	10. Frau Buchner (White)	

GIANT PUFF BALL: *J. C.* Your fungus, which measured 34 inches in circumference, is *Lycoperdon bovista*, the Giant Puff Ball (see fig. 42). It is one of the best of the edible fungi, if eaten when young and the flesh is still white. The late Dr. M. C. Cooke, in his book *British Edible Fungi*, gives the following directions for cooking: (1) Cut in slices half an inch thick, it may be simply broiled or fried in butter, pepper and salt, and when served up hot will meet with general approbation. (2) Cut the slices less than half an inch thick, cover them with egg beaten up, and sprinkle with bread crumbs; fry them until the surface

ninghill. 1, *Veronica exaltata*; 2, *Artemisia lactiflora*; 3, *Sidalcea malvaeflora*; 4, *Lysimachia verticillata*; 5, *Rudbeckia laciniata*; 6, *Rose Philadelphia Rambler*; 7, *Rose Wichuraiana alba*.—*H. S. E.* *Elymus arenarius*, so far as can be determined without foliage.—*M. M.* *Escallonia macrantha*: *N. O.* *Saxifragaceae*.

NYMPHAEA LEAVES DISEASED: *Caltha*. No fungus is present on the Water Lily leaves, but it cannot be stated definitely that the injury is caused by tar water from the road entering the stream.

PEACH LEAVES: *B. P. L.* The injury is caused by the shot-hole fungus (*Cercospora circumscissa*), which attacks several of the stone fruits. Remedial measures should have been resorted to earlier, but next season, when the leaves are young, spray the trees with liver of sulphur, one ounce in five gallons of water.

RAMBLER ROSES FOR WEST WALL: *G. C.* The following varieties are suitable for your purpose: American Pillar, Shower of Gold, Silver Moon, Miss Helyett, Gerbe Rose, and François Guillet.

ROSE EXCELSA: *H. C. B.* We regret that it is not possible for us to form an opinion in respect to the failure of particular shoots without seeing the specimens and learning something of the cultural conditions.

ROSE LEAVES DISEASED: *W. S. L.* The leaves are injured by the Orange Rust of Roses, which pest is common on certain varieties in August. In autumn it develops into little black spots on the leaves, which fall prematurely in consequence. The appearance of the two stages is so distinct that they were at one time thought to be separate diseases. All that can be done to check the disease is to burn any infested leaves and shoots and spray the plants with potassium sulphide.

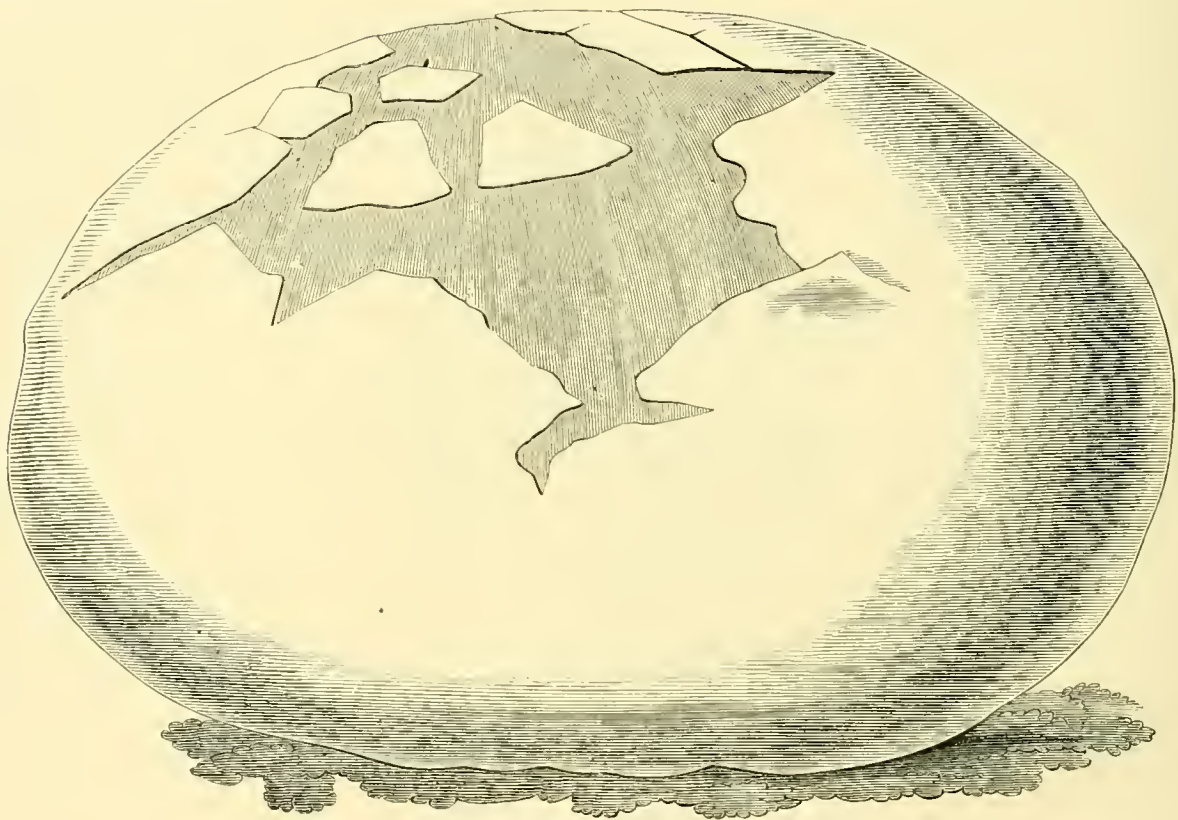


FIG. 42.—THE GIANT PUFF BALL.

is browned, like a fried sole, and then serve. Of course, pepper and salt are better sprinkled over before frying.

GRAPES DISEASED: *Anxious, X. Y. Z.* See reply to *S. W.* in the issue for August 14, 1915, p. 110.

GREEN TOMATO CHUTNEY: *G. H.* A delicious chutney may be made of unripe Tomatos as follows: Take of green Tomatos 4 lbs., Apples and Onions 1½ lb. each, Sultanias ½ lb., sugar ¾ lb., salt 1 oz., and Peppers and Chillies to taste. Slice the Tomatos, Apples and Onions and boil these with the other ingredients for four hours in 1½ pint of vinegar.

NAMES OF PLANTS: *M.* 6, *Verbascum* sp. We cannot identify the species, nor the other specimens, the flowers sent being inadequate. Send larger and better specimens, packed in a substantial box, as the package arrived in a crushed condition.—*R. S., Hertford*. 1, *Stachys lanata*; 2, *Santolina Chamaecyparissus*; 3, *Anaphalis margaritacea*; 4, *Euphorbia Cyparissias*; 5, *Echium vulgare*; 6, *Eupatorium cannabinum*; 7, *Lysimachia clethroides*.—*G. H. Denby, Sun-*

PRUNING PERNETIANA ROSES: *G. Bennington*.

If the varieties are capable of passing through the winter uninjured they require only very moderate pruning the first season of planting, but unfortunately the shoots of Rayon d'Or have a tendency to die back. Mme. Edouard Herriot, Cissie Easlea and Louise Catherine Breslau are of a much hardier nature. These three varieties develop firm, ripened wood. At the end of March leave the growths about 12 to 15 inches long. In subsequent years a very moderate pruning is best. The plants will send up strong basal growths, and some of the older shoots should be cut out during the summer, preferably after the first flowering. You should allow plenty of space—say 2 feet at least—between the bushes, and in all other respects treat them as Hybrid Teas. The new variety Constance is said to be a great improvement on Rayon d'Or in the matter of growth, and you should also plant Mrs. Wemyss Quin, a variety with flowers of an intense shade of yellow and an excellent grower.

THYME: *J. H.* The specimens sent are too scrappy to identify. If you send larger specimens, packed so that they arrive in good condition, we will do our best to name them.

TOMATO DISEASED: *C. S.* The plant is attacked by the fungus *Botrytis*. Put quicklime in the soil where the plant grows, to prevent the disease from spreading to neighbouring plants.

VINE LEAVES: *Foreman*. The wart-like excrescences on the underside of the leaves are caused by the climatic conditions of the house, a want of proper balance between the temperature and the amount of atmospheric moisture. Afford special attention to ventilation.

Communications Received.—*H. E. C.*—*A. T.*—*R. A. D. A.*—*D. M.*—*I. M.*—*J. F.*—*L. C.*—*Hants*—*A. N.*—*F. R.*—*R. J.*—*A. B.*—*W. C. L.*—*R. B.*—*A. B.*—*T. N.*—*P. T.*—*Constant Reader*—*N. R.*—*J. B. H.*—*A. H. M.*—*C. S.*—*R. S. H.*—*G. H. D.*—*F. P.*—*W. F.*—*H. T.*—*W. C. C.*—*A. B. H.*—*R. A. R.*—*W. B. H.*—*F. A.*—*T. A. W.*—*K. A.*—*G. C. J.*—*E. A. B.*—*T. L.*—*H. M.*—*R. H.*—*E. W.*—*C. C.*—*W. K.*—*E. M.*—*R. A.* (Norwich).

THE Gardeners' Chronicle

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ROSES FOR BUTTON-HOLES.

THE qualities that go to the making of a good Rose for wearing in the button-hole are doubtless to some extent a question of taste; and it is proverbial that matters of taste do not admit of discussion. The occasion on which the adornment is worn is also a factor to be considered. A button-hole that is tolerated in a wedding guest may seem out of place and too conspicuous for the business man on his way to earn his daily bread. For such a one, a Rose having the size and proportions of an exhibition bloom would seem scarcely suitable; its weight would tell on the lapel of his coat and cause it to hang downwards in an awkward fashion. It is a common sight at a Rose show to see some of our friends who have just finished staging their exhibits select from their "spares" the largest and most striking flower wherewith to decorate their person during their visit to the show. Anywhere else we might question their taste, but at the Rose show we accept the adornment as natural and appropriate, and, it may be, even sympathise with the feeling that has caused our friend to carry his large and beautiful flower so that it may be seen by his acquaintances, rather than consign it to the dark box beneath the staging, where it would blush unseen.

The exhibits in the classes of Roses for button-holes met with at country shows are usually rather spoilt by the permission to use added foliage. This liberty is freely taken advantage of by the addition of Adiantum fronds or Asparagus sprays, both of which are singularly out of place with a button-hole Rose. The only foliage really admissible is that of the Rose

itself, and it is open to question whether even this is desirable. When, however, as often happens, the flower can be gathered with an upper leaf which can take a suitable position without being detached, it is clearly desirable. The button-hole Rose is frequently carried in a little metal tube sold for the purpose, at the bottom of which a few drops of water can be placed, and the Rose, with this assistance, will keep fresh for a whole day or longer. But if the leaf, instead of being attached to the natural stem, is broken off and inserted behind the Rose, it quickly fades and is apt to some extent to spoil the appearance of the flower.

In early spring and until the middle of May, or later if the season be backward, one has to rely for one's daily button-hole on the flowers that happen to be out in the greenhouse at the time. Richmond, Melody and Mme. Abel Chatenay will often be found suitable, and the side buds, i.e., small flowers, of many of the Teas, such as A. Hill Gray, Bridesmaid and Molly Sharman Crawford, are often gathered. Curiously enough, Lady Waterlow under glass often makes a flower of good enough shape for the purpose, though it rarely does so out-of-doors, because it comes out too quickly. The button-hole Rose may or may not have fragrance; if so, this confers an additional charm, but it is of the first importance that it should be of shapely form—a loose and floppy Rose such as we find in many members of the China group is of little value for the purpose.

When the outdoor Roses begin to appear in my own garden some of the earliest and most attractive flowers for button-holes are found on the unpruned plants of Marquise de Salisbury. These Roses are admirably suited for the purpose; nearly always of rather small size, they are of a fine rich crimson colour and possess a delightful perfume. I grow two beds of this Rose, one of which is pruned, and the other merely has the dead tips slightly shortened, being practically left unpruned. By this means a succession of bloom is assured, and, somewhat to my surprise, I have found the unpruned plants usually the more satisfactory of the two. Nevertheless, it will not generally be advisable to leave them too long unpruned, because the stems then often harden unduly and the plants become leggy and difficult to treat. With the double-bed system this difficulty is easily surmounted, for the bed that is left unpruned one year can be pruned the next.

Among the summer Roses, the deep rich colour of the Old Tuscany and its delightful scent make an attractive spot of the corner of the garden where it grows during its brief flowering period.

Among the Hybrid Teas the best button-hole Roses will generally be found among the decorative rather than the exhibition varieties. Of the crimson varieties to succeed Marquise de Salisbury, few are better than Richmond, which also has the charm of fragrance, or Liberty when it is caught just right, in succession

to Richmond; while of the pinks Mme. Abel Chatenay is always reliable. In pale shades delicately pretty flowers for the purpose may be found in Mrs. Harold Brocklebank, Lady Greenall, Souvenir de Gustave Prat and Ophelia, all of which have beautiful form, and a bed will provide some suitably-sized flowers. Early in the season, while we get its intense yellow colour, few varieties are better than Mme. Ravary. It is well to make the most of it while we can, for as the season advances the intense yellow disappears, and though flowering freely until well into the autumn, it has too little distinction for our purpose. For the same reason Melody, striking as it is when grown under glass, is of little use from the open ground—at least in my district. Of the art-coloured flowers, the variety Lady Pirrie is excellent as quite a tight bud; and often Mrs. Alfred Tait is pretty, though I do not find I use this flower so much as I had expected to do—perhaps it is a little loose in the petal. Rayon d'Or, though a fine colour, is usually of too poor a shape to be useful for our purpose; but Mme. Edouard Herriot seems highly promising—not only are the flowers of striking colour, but they are very freely produced, and, at least on cut-back plants, not too large. The smaller flowers of Willowmere are also attractive and likely to be useful. Arthur R. Goodwin again is a most fresh and lovely colour, but it must be picked and worn quite as a bud. When the flowers expand they become useless for our purpose.

Of the Tea Roses I should put Lena easily first. It is a finely-shaped little Rose of intense orange-yellow colour, and the bud is almost invariably about the right size for a button-hole flower. Lady Roberts, however, makes a good second choice, and should also be picked in the bud state before the flower expands. Very good, too, are the smaller flowers of Mrs. Herbert Stevens, some of the best whites we have, for they are almost always of good shape, with long petals and high-pointed centre. By no means to be despised are the smaller flowers of Mme. Jean Dupuy and Mme. Henri Berger, but the former is of little use if the weather be unfavourable.

I have said that the Chinas as a class are too wanting in form for our purpose, but I think I ought to make an exception in favour of Comtesse du Cayla on account of its wonderful colouring, which in favourable weather is sometimes almost equal to that of Mme. Edouard Herriot. For our purpose it should be picked quite young. Now and again, too, a flower of Queen Mab may be found attractive. Queen Mab is perhaps the best in shape of the China group, and its soft, pale-peach colouring is very pleasing while fresh.

Hitherto I have taken little account of fragrance, but in truth this quality is a great asset in a button-hole Rose. In order to obtain this in its greatest perfection we must have recourse to the crimson Roses. Deepest in colour of the crimson flowers is Château de Clos Vougeot, with a most delightful aroma, and if it is to be picked in the bud state we may

pardon its want of form when the flower expands. I often find myself searching even among the Hybrid Perpetuals for a small flower of good shape, and not always without success. The bed of Victor Hugo and that of Commandant Félix Faure are by no means always examined in vain. Hugh Dickson is usually too large, and on my light soil Horace Vernet produces too great a number of flowers of poor form. But occasionally a small, well-shaped flower, even of Horace Vernet, may be found, and when it is obtained it affords one many pleasant moments throughout the day, for at its best in fragrance, colour and form Horace Vernet is still without a rival. *White Rose*.

CONFESSIONS OF A NOVICE.—III.

I BELIEVE that I have discovered the chief difference between the uninformed amateur and the skilled practical gardener. The former is all agog to discover the reasons for things—reasons for failures and peculiarities of growth; the latter has more philosophy and is content to recognise that the skein of cause and effect is generally too tangled to be unravelled. He therefore invents a sententious form of words to embrace the phenomenon, and, to use a colloquialism, "leaves it at that." Thus our language is enriched by such time-hallowed expressions as "the rising of the sap," "the ripening of the wood," "a check to growth," and so forth. They don't seem to mean anything very definite, and yet these terms appear to me to be more serviceable than the explanations which biological science in its present infantile and loquacious state is able to offer us. What has set me thus philosophising is the way in which autumn has chased and overtaken summer in my garden. With respect to this year's summer Byron's lines were prophetic—the English winter ends in July to begin in August. At all events, the trumpets of winter's floral heralds have begun to blow, and the pageantry of autumn is rioting with that of summer in my garden. The climbing Roses were so late that many of them—*White Dorothy*, *Excelsa*, as well as *Hiawatha*—are even now not at their fullness, yet their aspiring blossoms are flanked with the gigantic growths of *Heleniums*, *Solidago* and *Asters*. Why the drought of June should have checked the Roses and accelerated the flowering of autumnal things is beyond me to imagine.

A question of more practical import, which I hope some reader with knowledge wider than mine will answer, is, What are the best yellow climbing Roses for a light soil? Of *Gardenia* I had great expectations, but it will not grow for me. Of *Gold Finch* I had hopes, but they yet await fulfilment. *Shower of Gold* is scarcely a yellow, and is more curious than beautiful—save for its foliage—and my specimens are parsimonious enough to please the Chancellor of the Exchequer. I planned to have a mass of yellow Roses flanking tall, straight bushes of *Bergamot*—the *Bergamot* is there, flourishing riotously, but the flanks of yellow await the wise advice of some good-natured reader.

The idea of the groundwork for my *Rose* beds I borrowed from *Wisley*—it consists of a pale-blue lavender *Viola*, which is there called *Maggie Mott*. The learned in these matters say that it is wrongly named, though rightly placed. A comparison of the *Wisley* *Maggie Mott* with the type in the small *Wisley* collection shows that the former is quite distinct from the latter, of better and freer habit, of less elegant flower-shape, and lacking the lilac-violet of the type. Whatever this spurious *Maggie Mott* may be, it is certainly a great acquisition, for though individually the blue of the flowers may be a trifle washy, the mass which this plant produces and goes on producing atones for the defect.

I owe a word of apology to the annuals which I despaired of so vocally a little while ago. The *Clarkias* have come away magnificently, and are

flowering their lives out, and even the *Antirrhinums*, which a few weeks ago nothing would move, have suddenly in these humid days blossomed out as though they enjoyed the gentle trouble of the rain.

Mankind made a great fuss about the number of the plagues of Egypt, but it seems to me that they were just a cinema show of what all good plants have to endure in a season in the garden. *Aphis* swept away the opening leaves of my solitary *Nectarine*. It in turn was swept away only to be followed by leaf-cmrl. Those leaves removed, more were pushed forth, to be devoured—as a nocturnal visit and an electric torch discovered—by earwigs. Of these we made short work, for their shamming dead betrays them. You shake the branches, and the earwigs fall and lie for a moment motionless on the sheet of brown paper spread on the ground. You roll up the paper and put it on the garden bonfire.

Of my early Apples, e.g., *Irish Peach*, the wasps have left nothing but a few hanging skins: flesh and core have all been devoured. I pity the wasps, for a sample that I tried was as bitter as my wrath at my loss. A. N.

ORCHID NOTES AND CLEANINGS.

CYPRIPEDIUMS.

A CORRESPONDENT who is a consistent collector of good *Cypripediums* writes: "Will the *Cypripediums* for general cultivation, and commercially, ever regain their former sway in Orchid circles? Not so many years ago the *Cypripedium* reigned supreme, and anything fairly good found a ready market. Later only the very best were marketable at reasonable prices, and now the whole class seems to be passing under a cloud."

Regarding the points raised in this letter, it may be remarked that good, distinct species of *Cypripedium*, and especially hybrids, have never lost favour with Orchid-growers, but whenever two or three new collectors having a special fancy for these showy and long-enduring flowers come on the scene there will be a revival of greater interest. The same varying fortune has been the lot of many classes of plants which change of fashion or lack of new admirers has forced into temporary and partial neglect. With hybrids of all sections the same is likely to take place, first with one set and then with another. One cause is that existing collections get clogged with inferior varieties, which depreciate the interest and value of the whole. The remedy is to clear out the inferior varieties and make room for better things—in fact, make a fresh start.

HYBRID ORCHIDS.

(Continued from June 5, p. 306.)

Hybrid.	Parentage.	Exhibitor.
<i>Anguloa Rolfei</i> , nat. hyb.	<i>Ruckeri</i> × <i>Cliftonii</i>	Sander and Sons.
<i>Cattleya Gaspar</i>	<i>Gaskelliana alba</i> × <i>Parthenia Prince of Wales</i>	Pantia Ralli, Esq.
<i>Cattleya Ordina</i>	<i>Carmen</i> × <i>Fabia</i>	Flory and Black.
<i>Cattleya Paula</i>	<i>Clarkiae</i> × <i>Dowiana aurea</i>	J. and A. McElean.
<i>Cypripedium Sinbad</i>	<i>Vandyke</i> × <i>G. E. Moore</i>	Sir Geo. L. Holford.
<i>Epidendrum fragracarpum</i>	<i>fragrans</i> × <i>prismatocarpum</i>	Sir J. Colman.
<i>Lycaste Atthuriana</i>	<i>plana</i> × <i>Balliae</i>	R. Ashworth, Esq.
<i>Laelio-Cattleya Apricosa</i>	<i>L.-C. Opair</i> × <i>C. Schroderae</i>	Flory and Black.
<i>Laelio-Cattleya Cortina</i>	<i>C. Empress Frederick v. L.-C. callistoglossa</i>	Flory and Black.
<i>Laelio-Cattleya Domallas</i>	<i>Dominiana</i> × <i>Pallas</i>	Flory and Black.
<i>Laelio-Cattleya Emmeline</i>	<i>L. anceps Schroderae</i> × <i>C. Whitei</i>	J. and A. McElean.
<i>Laelio-Cattleya Leda</i>	<i>L. purpurata</i> × <i>L.-C. Martinetii</i>	Sander and Sons.
<i>Laelio-Cattleya Irensis</i>	<i>C. Iris</i> × <i>L.-C. Hetchleyensis</i>	Sander and Sons.
<i>Laelio-Cattleya Mrs. Harold King</i>	<i>Epicasta</i> × <i>callistoglossa</i>	Mrs. R. le Bon.
<i>Laelio-Cattleya Rhemus</i> var. <i>Prunella</i>	<i>L.-C. Geo. Woodhams</i> × <i>C. Dowiana Kosita</i>	J. G. Fowler, Esq.
<i>Laelio-Cattleya Roger Sander</i>	<i>L.-C. Iminosa</i> × <i>C. Mossiae</i>	Sander and Sons.
<i>Odontodia Cereus</i>	<i>Odm. excellens</i> × <i>Oda. Charlesworthii</i>	Armstrong and Brown.
<i>Odontodia Red Cross</i>	<i>Oda. Cooksopiae</i> × <i>Odm. ardentissimum</i>	J. G. Fowler, Esq.
<i>Odontodia Redwing</i>	<i>Odm. Rolfeae</i> × <i>Oda. Charlesworthii</i>	W. Thompson, Esq.
<i>Odontodia The Prince</i>	<i>Odm. Ernestii</i> × <i>Oda. Charlesworthii</i>	Mansell and Hatcher.
<i>Odontoglossum Cerissimum</i>	<i>Ceres</i> × <i>ardentissimum</i>	Flory and Black.
<i>Odontoglossum Delta</i>	<i>Rolfeae</i> × <i>Othello</i>	C. J. Lucas, Esq.
<i>Odontoglossum Evelyn</i>	<i>Phoebe</i> × <i>crispum-Harryanum</i>	Mansell and Hatcher.
<i>Odontoglossum Fasciolon</i>	<i>Fascinator</i> × <i>Solon</i>	C. J. Lucas, Esq.
<i>Odontoglossum Menier</i> var. <i>St. Vincent</i>	<i>gandavense</i> × <i>amabile</i>	J. G. Fowler, Esq.
<i>Odontoglossum Milan</i>	<i>Rolfeae</i> × <i>Harryanum</i>	Flory and Black.
<i>Odontoglossum Wilchello</i>	<i>Wilkeanum</i> × <i>Othello</i>	C. J. Lucas, Esq.
<i>Odontoglossum Wymanense</i>	<i>periculatum</i> × <i>Harryanum</i>	Mrs. N. C. Cookson.
<i>Odontonia Kallir Queen</i>	<i>O. harvenstense</i> × <i>M. Warszewiczii</i>	H. T. Pitt, Esq.

THE ROME CONVENTION AND THE HORTICULTURAL INDUSTRY.

AT a Conference held in Rome in 1914, representatives of this country signed a convention setting forth restrictions on the trade in plants that they were prepared to recommend their Governments to carry out. The restrictions, if agreed to, will very seriously affect horticultural trade here. They have, however, not yet been carried out, nor has this country assented to them, but sooner or later the subject will come up again, and it behoves the horticultural industry to be ready for that time.

If this country assents to the convention, how will it affect the trade? Firstly, all nurseries and establishments supplying plants, seeds, etc., will be registered, licensed and inspected. Secondly, all nurseries will have to notify at once the appearance of certain scheduled diseases. Thirdly, they will have to adopt standard methods of dealing with certain diseases, spraying, fumigating, tipping or the like. Fourthly, their methods of packing and transport will be inspected and controlled. Fifthly, they will have to obtain, for each consignment of living plants destined for sale or for export, a certificate from an inspector as to its freedom from certain diseases or as to the nursery itself being free from certain diseases.

This last will, perhaps, be the most troublesome, as it involves the inspection of each consignment by an inspector before it is packed and after it is packed. The consignment must be packed according to the instructions, and the certificate specifying its contents must go with it.

A further clause in the convention lays down that plants cannot be imported from any country that either does not adhere to the convention or that has no service of officials for giving certificates, so that all importation of any plant at all, say, from China or Tibet, would appear to be absolutely stopped.

There is no question but that this procedure is going to be troublesome. Is it worth it? If this country does not adhere to the convention, what will happen? Its export trade in plants with adhering countries will cease to a large extent, if not wholly. It will be unable to send any living plants into any of the twenty-five countries that have joined the convention. It will be able to send plants to the United States, but only by carrying out a similar procedure in order to satisfy their requirements. Whether to adhere or not is evidently a very difficult question, and a joint committee, formed under the auspices of the Royal Horticultural Society, has been engaged on this problem. Clearly there are many things to be taken into

account. What diseases are there which we do not desire admitted into this country? Where do they come from and how? Have we suffered in the past from introduced diseases? Will the convention's restrictions keep diseases out or will they simply restrict trade and be of no use?

To answer these questions we must have information. We are using this interval to get that information, so that when the time arrives for discussion, the trade can take up a definite position and back it with facts. We have collected information about the diseases and pests which have been carried from country to country in the past and what carried them. We have information about the restrictions on trade at present in force. We have information about the diseases which do not exist in this country and which we do not want admitted; but we have no information as to the trade itself in this country, and this is a necessary part of the enquiry.

Particularly we require this: What is the position of the industry as regards imports and

The Board of Agriculture has intimated that it will not adhere to the convention if it be against the interests of the trade, and it is extremely important that the trade should have the necessary information on which to judge whether to recommend adherence to the convention, whether to stand aside, or whether to ask the Government to seek to modify it.

It is impossible in a single article to make clear what the effect of the convention will be, but I propose in another to explain the regulations already framed in France in anticipation of this convention being adopted. Whether this country adheres or not, the effect will be far-reaching, and we hope the trade will give the committee the help it needs by filling up the forms and returning them when completed to the Secretary, Royal Horticultural Society. The information will be treated as strictly confidential, and the only use made of it will be to compile tables of the total imports and exports of living plants, with the countries of origin or destination. *H. M. Lefroy.*

Carstenz, at an elevation of 2,500 feet; it was collected in flower in December or January.

Cypripedium papuanum is a *Paphiopedilum* (which Mr. Ridley prefers to regard as a section of *Cypripedium*), and belongs to Pfitzer's section, *Blepharopetalum*. It is evidently nearly allied to *Paphiopedilum violascens*, recently described by Schlechter, from the mountains of Kaiser-Wilhelms-land, which, however, differs in the colour of the flower, relative proportions of sepals and petals, and in having larger leaves. Both species are allied to *P. javanicum* from Java and Sumatra. *P. praestans* and the nearly allied *P. glanduliferum*, which are also natives of New Guinea, are widely removed from these and belong to a different section of the genus.

The following is a description of the new species:—Plant, 8 to 10 inches high; leaves, 4 to 6, leathery, oblong, $2\frac{1}{2}$ to 4 inches long, $\frac{1}{2}$ to 1 inch in greatest breadth, somewhat acute, the extreme tip minutely tri-cuspidate, pale green with darker green markings on the upper face; scape, 6 to 8½ inches to the base of the bract, deep crimson, bearing numerous stiff hairs; bract ovate, similarly hairy, about $\frac{1}{2}$ inch long; pedicel and deep-green ovary, hairy like the stem, 2 inches long; dorsal sepal, broadly ovate, with a short, abruptly acute apex, green, with five to six somewhat obscure deep crimson simple nerves on either side the mid-vein, barely 1 inch long by $\frac{3}{4}$ inch wide, hirsute on back, margin ciliate; united lateral sepals elliptic-lanceolate, subacute, $\frac{3}{4}$ inch long, $\frac{1}{4}$ inch wide, hirsute on back, with about seven raised nerves; petals oblong, broadening slightly upwards, obtuse, $1\frac{1}{3}$ inch long, $\frac{1}{2}$ inch greatest width, glabrous except for the ciliate margin, eleven-nerved, dull crimson dotted with darker spots in the lower half and tinged with greenish yellow; lip, $1\frac{1}{2}$ inch long, including the broad claw, which is about equal in length to the cup, minutely pubescent lateral lobes somewhat obtuse, cup 10 lines broad, dull crimson as in the petals, lobes tinged with greenish yellow; staminode lunateniform, notched above, lobes blunt, median process obtuse; column greenish yellow.

The appended diagnosis* has been supplied by Mr. Ridley. The illustration is a photographic reproduction from the plant in Mr. Rothschild's collection at Ashton Wold, Oundle. *A. B. Rendle.*

NERINE BOWDENII.

THIS beautiful African Lily is perfectly hardy in several parts of Devonshire: the specimens shown in fig. 44 are growing in Messrs. R. Veitch and Son's nursery at Exeter, under a south wall. Thirty-nine bulbs were planted on November 24, 1910, at 9 inches apart. By the time the photograph was taken the bulbs had multiplied exceedingly, and some seventy trusses were expanded, carrying from six to twelve flowers each, and many other inflorescences were developing. The scapes coming up in succession and the umbels opening by degrees gave the border a good appearance for from six to eight weeks. The flowers are pale pink with a darker shade down the centre of each petal. The plants were occasionally watered during dry weather. The season of flowering is the end of September to November. *Nerine Bowdenii* is equally serviceable as a pot plant; such

* *Cypripedium* (§ *Paphiopedilum*) *papuanum*, sp. nov. Folia 4-6 oblonga, coriacea, 6-10 cm. longa, 1.3-2.5 cm. lata, glabra. Scapus 15 cm. longus, hirtus. Bractea ovata, hirta, 1.3 cm. longa. Sepalum posticum ovatum, acutum, 2.4 cm. longum, 2 cm. latum, dorso hirtum; lateralia connata, elliptico-lanceolata, subacuta, hirta, 1.9 cm. longa, 8 cm. lata, nervis elevatis 7. Petala oblonga, obtusa, 4.2 cm. longa, 1.2 cm. lata, anophthalma, glabra, mucronibus ciliatis exceptis. Labellum 3.7 cm. longum, 2 cm. latum, minute pubescens, ungue lato, sacco aequilongio, lobis lateralibus subobtusis. Staminodium lunato-rectum, lobis oblongis obtusis, processu mediana brevi obtusa. Rostellum grande, oblongum, obtusum, linguiforme, canaliculatum. Papua. Mt. Carstenz, 2,500 ped. alt. *H. N. Ridley.*



FIG. 43.—CYPRIPEDIUM PAPUANUM: FLOWERS DULL CRIMSON TINGED WITH GREEN OR GREENISH-YELLOW.

exports respectively? What are these, where do they go and whence do they come? Are the imports of new wild plants from, say, China, more important than the imports of cultivated new varieties from Europe? If a clause in the convention concerns, let us say, the importation of Japanese Maples and deciduous nursery stock from Japan, are we affected or not?

There are countless points of this sort which can only be answered by a knowledge of what the imports and exports are, what kinds of plants, of what value and amount, where from and where to, and whether the imported plants are from the forest or jungle or from foreign nurseries.

In the hope of getting this information the Royal Horticultural Society has addressed a letter to every firm dealing in live plants. Attached are forms so prepared that each firm may give, with the least trouble, the information that the committee wants, and the committee very strongly urges all members of the trade to give the information asked for. Sooner or later a decision will have to be taken.

NEW OR NOTEWORTHY PLANTS.

A NEW CYPRIPEDIUM FROM DUTCH NEW GUINEA.

Among the plants collected on Dr. Wollaston's recent expedition to Dutch New Guinea is a new *Cypripedium*, which Mr. H. N. Ridley, who was responsible for working out the collection, has named *Cypripedium papuanum* (see fig. 43). The dried material was very scanty, but a number of living Orchids was collected at the same time for the Hon. N. Charles Rothschild, and among these the *Cypripedium* in question has recently flowered under Mr. Wright's care at Ashton Wold, Oundle. It is a small plant 8 to 10 inches high, with a proportionately tall, single-flowered scape springing from among a few thick, leathery, tessellated leaves. The colour of the flower is a rather dull crimson tinged with green or greenish-yellow. The plant was found by Mr. C. B. Kloss, the botanical collector to the expedition, on Mount

need a liberal supply of water during the growing season—that is, from the New Year until after the flowers are over—when watering should be discontinued until growth commences. The bulbs should be re-potted while dormant. Messrs. Veitch inform us that the two ends of the same border, about 3 feet each, are now occupied with *Watsonia Ardernei*, and on June 8 the plants were covered with bloom, there being about thirty spikes open.

NOTICES OF BOOKS.

THE WELL-CONSIDERED GARDEN.*

THIS book comes from the other side of the Atlantic, is written for American gardeners, and embodies the experiences of an amateur gardener, gained in the formation of her own American garden.

It nevertheless has several claims on the notice of English gardeners. It gives us, for instance, an idea of the present-day conditions and aims of gardening in the Northern United States; and it is gratifying to note that English

Heucheras familiar to me before were the common species, *H. sanguinea*, or the much-vaunted variety *Rosamunde*; in that the genus is native of temperate North America. When one considers what gains to garden beauty have been derived from the cultivation and selection of our native plants by English gardeners—as, for instance, the Primrose and Cowslip, Pansy, Wallflower, and that naturalised alien the Carnation, it seems a pity that American gardeners are not more enterprising with regard to many lovely natives that might yield as rich results.

The climatic and general conditions of American gardens seem to be ideal for the Tulip and Gladiolus. Mrs. King tells us: "Tulips are unfailing, certain to appear. No coaxing is necessary, nor do they require special conditions." Lucky Americans! A chapter devoted to the newer Gladioli shows that they are happier in American gardens than in the majority of English ones. The description of a trial garden for new plants provides a good suggestion for careful and fastidious colour schemers. A chapter on garden books is interesting reading, and shows that, except *Bailey's Encyclopaedia*, those

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See *Tables, Supplement, Gard. Chron., July 24, 1915.*)

(Continued from page 115.)

5, SOUTHERN COUNTIES.

DORSETSHIRE.—Although we escaped the late frosts, the drought greatly affected the fruit crops. We had a good show of Pear and Plum blossom, and Pears set very fairly, but afterwards fell in quantities. Gooseberries, Currants, and Strawberries also promised well, but the two former crops were a failure. Disease is very bad in places. The rains since June 22 have done much good. *H. Kempshall, Abbotsbury Castle Gardens, Dorchester.*

HAMPSHIRE.—The fruit crops generally in this district are very promising. The present season has been favourable for everything except Strawberries, which bloomed well and were not damaged by frost, but owing to the continued drought the fruit failed to mature. Aphis, both black and green, have been



FIG. 44.—NERINE BOWDENII FLOWERING IN MESSRS. ROBERT VEITCH AND SON'S NURSERY, EXETER.

gardens and writers have been closely studied. The style of gardening that has found most favour is that of formal design, with rectangular beds, somewhat stiffly furnished with herbaceous plants. These are grouped for colour effect with such an amount of care and elaborate forethought that one might imagine the labour would become irksome were it not that Mrs. King constantly shows what genuine delight she derives from the subtle colour harmonies she arranges and achieves.

For the most part the plants made use of are Darwin Tulips, Bearded Irises, and the herbaceous and bulbous plants most familiar to English gardeners. In fact, unless Mrs. King is too modest to praise the native plants of her country, it would seem that they are somewhat unfairly neglected. Trilliums, for instance, are not mentioned, and *Erythroniums* only alluded to as being found wild in the woods. It seems strange to read of *Heucheras*, whose "little roots had been subjected to the test of a two-weeks' journey by sea and land from an English nursery to Michigan"; and, again, "the only

that have proved most helpful are of English origin.

The text is wonderfully free from errors. The English eye is rather worried by the use of a capital letter for all specific names of geographical origin, and the lack of it for generics when used without specifics. *Crocus biflorus pusillus* is not the Scotch Crocus, and the occurrence of *Ixiolirion pallasi*, *Deutzia Lemoinei* and *Tulipa clusiana* in the same paragraph with that misstatement makes one wish an English proof-reader had re-arranged it.

Mrs. King is so happy in her zealous search for garden harmonies that it is easy to believe she must have an inspiring effect on her country's gardeners. Let us hope, however, that they will not follow her too slavishly, nor without some originality of their own, or else the combinations of *Tulipa vitellina* and *Scilla campanulata*, or pink *Campanula medium* and *Stachys lanata* will become as universal as those of Currant jelly with mutton and Mint sauce with lamb.

One finds on every page evidence of the happiness Mrs. King derives from gardening—the sure sign of the good gardener.

troublesome, and have damaged the young growths of Apples and Cherries, but heavy rains helped to clear the trees of the pest, and the fruit is fast swelling, with prospects of a splendid crop. *Lewis Smith, Cadland Park Gardens, Fawley, Southampton.*

—The Apple crop is a poor one, the trees being badly attacked by aphis. The trees carrying the best crops are Bramley's Seedling, Annie Elizabeth, Emperor Alexander, Lord Derby, James Grieve, Allington Pippin, and Fearn's Pippin. Pears are fairly plentiful, and the quality is good. Plums are a failure; most of the trees bloomed fairly well, but the fruit did not set. Peach and Nectarine trees on walls are carrying excellent crops, the leaf blister not being so prevalent as in former years. Strawberries have done well, the quality being very good. All small fruits are carrying good crops, with the exception of Gooseberries. *A. J. Legge, Dogmersfield Park Gardens, Winchester.*

—Our Apple trees blossomed remarkably well, but they were attacked with the purple aphis, which quickly curled the leaves, and owing to scarcity of labour the trees could not be sprayed. There is an abundance of fruit, but

* *The Well-Considered Garden.* By Mrs. Francis King. Charles Scribner's Sons, New York.)

with the crippled condition of the foliage the fruit cannot be expected to swell. The varieties which have suffered most are Bramley's Seedling, Worcester Pearmain, Lady Sudeley and Lord Grosvenor. The varieties yielding the best crops are Warner's King, Cox's Orange Pippin, Mère de Ménage and Norfolk Beauty. The Plum crop is an average one, and the trees are quite healthy. Raspberries, Currants, Gooseberries and Loganberries are heavily laden with excellent fruit. Strawberries were not so plentiful as in some past years, owing to long continued drought early in June. *E. Molyneux, Swinmore Park.*

—The trees of Apples, Pears, Plums and Cherries blossomed splendidly here this season, and gave promise of record crops. Unfortunately, an early drought set in, which caused some of the fruit to drop from Apple trees. Other years I have given the trees copious waterings, especially those growing on the walls, but shortage of labour has prevented me from doing so this season. Green and black fly has been troublesome, and I have been obliged to spray several times. The severe frosts on June 19, 20 and 21 did not affect our fruit crops, but some of the neighbouring gardens suffered badly. The soil is very sandy and dry. *J. W. Buckingham, Milland Place Gardens, Liphook.*

KENT.—The winter rains had a bad effect on Strawberries, which made scarcely any growth during these months. The Gooseberry yield is a poor one. Apples are suffering from an unprecedented attack of aphid, and the crop will be seriously affected in quality and quantity. *E. A. Bunyard, The Royal Nurseries, Maidstone.*

—Owing to a very severe attack of aphid Apples will not be such a heavy crop as they promised earlier. Pears are good, and fairly clean. Strawberries yielded a poor crop, but Raspberries and Loganberries bore heavily, and the fruits were excellent. There are about six to eight acres of Loganberries near here, and they are looking exceedingly healthy. Black Currants are very scarce. Peaches and Nectarines promise well, but much washing has been necessary to keep the trees free from aphid and red spider. *George Woodward, Barkham Court Gardens, Maidstone.*

—The condition of many Apple trees in this district is deplorable. Owing to an attack of aphid of unusual severity the foliage and young growth in many instances are shrivelled up. Lane's Prince Albert is amongst the varieties most seriously affected, yet it is carrying an abundant crop of small fruits. Pears and Plums, though in many cases similarly attacked, are not at the present time affected to so great an extent. *Geo. Fennell, Bowden, Tonbridge.*

—The fruit crops vary, but the late frost did much damage. The Plum yield will only be fair, the frost and east winds spoiling the crop. Peaches and Cherries on walls are good, as also are Raspberries, Black Currants and Gooseberries. The Strawberry crop was a moderate one. *J. T. Shann, Betteshanger Park Gardens, Easry.*

—The crops of most varieties of Apples are much under average, but a few trees are yielding average quantities. The drought has thinned the Pear crop very considerably, yet leaving a sufficiency of fruits which will attain extra size. Victoria Plums will be very plentiful, but other varieties are much under the average. Of small fruits Gooseberries, Black and Red Currants and Raspberries are all well over the average. Strawberries suffered severely from the drought of last autumn, and the crop was small and soon over, with the exception of Givon's Late Prolific, all first year's plants, whose fruit was abundant and very large. *Charles E. Shea, The Elms, Fooks Cray.*

—On the whole the fruit crops this season

are disappointing. Strawberries were much under the average, those giving the best returns being one-year-old plants of Royal Sovereign. The berries of late varieties did not swell well. Apples had one of the worst attacks of aphid ever experienced, and owing to the scarcity of labour spraying could not be done as methodically as usual. Plums on walls look fairly promising, but fruit on bushes is extremely scarce. *J. G. Weston, Eastwell Park Gardens, Ashford.*

MIDDLESEX.—The crops of Peaches and Nectarines are very good, although the leaves were much infested with aphid. The growth is now free and clean. Of Apples and Pears we have average crops. Strawberries suffered from want of rain, and did not swell their fruit, consequently the crop was below the average. Our soil is light and porous, and trees need much feeding to have the fruit in fair condition. *H. Markham, Wrotham Park Gardens, Barnet.*

—This year the Apple trees are bearing remarkably heavy crops in most places, and the fruit of nearly all varieties is of good quality. Cox's Orange Pippin is below the average in many places; Lane's Prince Albert, Bramley's Seedling, Lord Suffield and Lord Grosvenor are excellent, and Dumelow's Seedling, which was poor last year, is bearing well this season. Keswick Codlin trees are over-cropped. Of Pears, Williams's Bon Chrétien are heavy in places. The Plum crop is, with a few exceptions, a small one. *John Weathers, Park View, Isleworth.*

—Apples suffered considerably from the dry weather during the latter half of May and June, which was accompanied by east winds, together with a bad attack of aphid. Many of the fruits have fallen. From May 19 until June 26 we registered only 0.12 inch rain in the 38 days. The Pear crop is a good one. Strawberries were satisfactory, but the late varieties were small, owing to the drought, Royal Sovereign being the best. We experienced few frosts in May. The soil in these gardens is light loam, overlying a gravel subsoil. *James Hawkes, Osterley Park Gardens, Isleworth.*

—We have good all-round crops of fruits this year. The spring being somewhat late, we escaped some of the spring frosts. The Cherry crop on walls has been exceptionally good and the quality excellent. This applies not only to the best dessert varieties, but also to Morellos. The soil here is a light loam, resting on gravel and overlying the London clay. *James Hudson, Gunnersbury House Gardens, Acton.*

SURREY.—The fruit crops are satisfactory on the whole. Apples are much stunted, owing to excessive attacks of aphid. I attribute the smaller crop of Strawberries than is usual to the exceptionally dry autumn, our plants having made only about half their usual growth. Cherries are good, both dessert and Morello, but much difficulty has been experienced in keeping the trees free from aphid; in fact, all fruits have suffered from this latter pest to a great extent. The soil here in the valley is a medium loam, with gravel subsoil, which quickly dries. On the rising ground we get a chalk subsoil, and further from the valley the loam is shallower. It seems evident that chalk subsoil holds the moisture better than a gravel subsoil. *George Kent, Norbury Park Gardens, Dorking.*

—Apples were sufficiently plentiful to require thinning. The Strawberry crop was a failure, owing to the protracted drought, which also affected other small fruits. Trees bloomed abundantly, the weather during that period being exceptionally fine. Our soil is weald clay. *James Watt, Mynthurst Gardens, Reigate.*

—The early frost seriously injured Apricots, but Peaches and Nectarines fared better. Plums, Pears and Apples have been badly injured by aphid, in spite of autumn spraying with quassia and other insecticides. The soil is light sandy loam. *Jas. Lock, Oaklands Lodge Gardens, Weybridge.*

—Apple trees in the grass orchard are suffering to an unprecedented extent from insect infestations, and have an exceedingly unhealthy appearance, but trees in the garden are healthy and clean. In many cases the trees are bearing crops above the average. Pears show excellent promise; the fruit is swelling rapidly and the foliage is clean and healthy. Black Currants, Red Currants and Gooseberries are well above the average and the quality is first-rate. *Thos. Smith, Coombe Court Gardens, Kingston Hill.*

SUSSEX.—Nearly all varieties of Apples carried large quantities of blossom, and in most cases seemed to set, but later they dropped to a large extent, although some varieties are carrying good crops, and require thinning. Aphid has been very prevalent, and I have not seen the Apples so badly injured from this cause for years past. The soil is clay. *J. Muddell, Sedgwick Park Gardens, Horsham.*

—Quite half the Apple crop was spoilt by the worst, most general, and most persistent attack of aphid ever experienced, notwithstanding timely spraying. Plums appeared to set well, but not one in ten swelled, the rest having dropped. Except for Gisborne, which is an average crop, there is only a sprinkling of fruit, and hardly any on Monarch. Cherries were very slow in swelling and ripening, and failed to come to full size. Apart from scab on some varieties, Pears developed well. Gooseberries were half spoilt by mildew. Black Currants "ran off" a good deal, and ripened irregularly. The extreme wetness of the winter and the severe droughts of the spring months and June rendered the season a very unfortunate one for fruit generally. Fungus pests were developed to an extraordinary extent, and trees were prevented from growing away from insect attacks. *William E. Bear, Magham Down, Hailsham, Sussex.*

WILTSHIRE.—The Strawberry crop in these gardens would have been a good one, but 3° of frost registered in the middle of May spoilt many of the trusses. Following this we had five weeks of dry weather, accompanied by north-east winds, so the later berries failed to swell. Gooseberry bushes are yielding a good crop, as also are Black Currants, but Red Currants are not so plentiful. There is a good crop of Raspberries, especially the variety Laxton's Bountiful. Of Pears, Doyenné du Comice and Winter Nelis are very scarce this season. Of Apples, Blenheim Pippin is very plentiful, also Ribston Pippin. Green and black fly have been very troublesome on Plums, Apples, and Cherries. *T. W. Birkinshaw, Compton Bassett Gardens, Calne.*

7. ENGLAND, N.W.

LANCASHIRE.—The fruit crops in this district vary considerably. Considering the amount of blossom, the April and Pear crops are disappointing. Insect pests have been very prevalent. The soil is light and friable, on a clay subsoil. *J. Gibbins, Croxteth Park Gardens, Liverpool.*

—The conditions prevailing in this district are most unfavourable for the production of outdoor fruit. The soil is of a cold and wet nature, having in some places a clay subsoil not many inches below the surface. Being in the vicinity of large towns, in which are factories (from whose chimneys quantities of black smoke are emitted), coal pits, and two or three large chemical works from which poisonous gases escape, foliage on fruit trees, and especially on the north side, is completely spoilt. It will thus be seen that the terms average and good, when applied to crops in this district, will not have the same meaning as they would in a good fruit-growing locality. *Jos. Harris, Gawthorpe Hall Gardens, Burnley.*

—The fruit crops in this neighbourhood vary very much. The following varieties of Apples are carrying fair crops: Golden Spire, Duchess of Oldenburg, Warner's King, Cellini

and Lord Grosvenor. The Pear crop is under the average, with the exception of Jargonelle. Plums are fairly plentiful. The small fruits have yielded good crops. Strawberries were the best for many years, and we have a large quantity of Gooseberries. *Joseph Stoney, Roseleigh Gardens, Woolton.*

— The dry autumn last year greatly assisted the ripening of outdoor fruit trees, and this spring they all carried large quantities of large, well-formed flowers. Pears suffered during the flowering period from frosts and east winds, which reduced the crop to an average one. Apples promise to be clean, healthy fruit. There are large crops of Cherries, Gooseberries, Raspberries, and Red and Black Currants, and their quality is good. The Strawberry season was a good one. Our soil is of a heavy, retentive nature, and the drought at the end of May and nearly all June did not cause the fruit to drop. *C. H. Cook, Knowsley Hall Gardens, Prescott.*

WESTMORELAND.—There was a good show of blossom this spring, but severe frosts in the third week of May damaged the flowers, especially those of Gooseberries. Apples are very promising, but Pears are scarce. Of Strawberries, Royal Sovereign is still amongst the best for cropping and general utility. Three months' drought ended on July 4, and the rain helped to clear the foliage of honeydew. *W. A. Miller, Underley Hall Gardens, Kirkby Lonsdale.*

— The fruit crops in this district have suffered from late frosts and continued drought, there being scarcely any rain from the end of March until nearly the end of June. Apples appear to be fairly plentiful, but many are falling. Although Westmoreland is noted for Damsons, these fruits are very scarce. Victoria Plums and a few of the later sorts are doing fairly well. *Richard F. Lambe, Witherlack Hall Gardens, Grange-over-Sands.*

8, ENGLAND, S.W.

CORNWALL.—The fruit crops are more satisfactory than was at first anticipated. Apples are almost a failure, owing, no doubt, to the abundant crop the trees bore last season. Pears are up to the average, and promise to be of good quality. Peaches are above the average, the trees being clean and making good growth. Strawberries and all small fruits are very good. The soil is light and well drained. *Wm. Andrews, Tregothnan Gardens, Truro.*

— The Apple and Pear crops are very disappointing. The blossom was plentiful, but the fruits set badly, and just at the critical stage cold easterly winds prevailed. Peaches and Nectarines have set much better than usual, and there is promise of good crops. Soft fruits are abundant. Black Currants, Raspberries and Strawberries being especially fine. Our soil is a moderately light sandy loam, deficient in lime, and has a rocky or granite subsoil. *Frank J. Clark, Tchidy Park Gardens, Camborne.*

— All fruit trees blossomed profusely, but owing to the north-east wind the fruits on the more exposed trees did not set very freely. The trees are looking clean and healthy, and making good growth. *J. Spilbury, Clowance, Praise, S.O.*

DEVONSHIRE.—Many Apple trees are but sparsely fruited this year, whilst others are carrying good crops, thus making an average return. Plum trees bloomed profusely, but failed to set their fruit, and silverleaf disease is attacking many of the trees. Peaches and Nectarines are carrying good crops, and are healthy. Small fruits generally are good and plentiful. Strawberries were somewhat poor, but rain came in time to improve the crop considerably. Our soil is composed of light loam overlying the red Devonshire sand subsoil. *T. H. Bolton, Powderham Castle Gardens, Exeter.*

(To be continued.)

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

PINEAPPLES.—Plants with maturing fruits require very careful attention, and especially in watering the roots. The amount of soil moisture should be reduced gradually as the fruits ripen, and the same remark applies to atmospheric moisture. Air should be admitted through the top ventilators early in the morning, when the weather is favourable. This will dry the fruits if moisture has condensed on them during the night. Should the fruits promise to ripen in excess of the requirements, some of the plants should be removed to a cooler house or pit. Plants of the Queen variety that are intended to furnish ripe fruits in May or June of next year require very careful watering. By this it is not intended that they should be kept dry, but for early forcing it is essential that the plants be allowed a certain degree of heat, otherwise, if they are kept growing till late in the autumn, great difficulty would be experienced in getting them to fruit early. Reduce the temperature gradually, and admit air freely on all favourable occasions.

POT FRUIT-TREES.—Trees from which the fruits have been gathered should be removed from the orchard-house and plunged in a cinder-bed out of doors. They will still need careful attention, as they have yet to mature and develop the fruit-buds. In hot, dry weather syringe the foliage twice daily. Trees that have borne heavy crops should be watered with liquid manure and soot-water. Those intended for forcing early should be attended to without delay, shifting any that require larger pots. Some may only need top-dressing, but in any case it is necessary to examine the drainage, to see if it needs renewing. If top-dressing is decided on, remove as much of the old soil as can conveniently be taken away without damaging the roots, and replace it with compost consisting of good loam, lime-rubble, and a sprinkling of artificial manure. Stand the plants outside in slight shade until they have recovered from the disturbance, and syringe them frequently for a time, especially in dry weather, but guard against over-watering the roots until they have grown freely in the new soil.

CHERRIES.—Trees growing in borders have completed their growths, and any shoots not required for extension should be pruned at two or three buds from the base. Trees that have failed to produce satisfactory crops and have made luxurious growth should be root-pruned; if they are not over-large, it would be better merely to lift them. In doing these operations, take the opportunity to examine the drainage, which may possibly be the cause of the trouble. In replanting, use fresh loam to which has been added a fair proportion of lime-rubble, and ram the soil rather firmly about the roots. Shade the trees that have been disturbed during hot weather, and spray the foliage at least twice daily.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

NERINE FOTHERGILLII MAJOR.—When the plants show signs of throwing up their flower-spikes they should be made tidy and placed in a cool house. It is not necessary to re-pot these plants more often than once in three or four years, and it is remarkable in what a small quantity of soil they will thrive.

MIGNONETTE.—To have Mignonette blooming in pots over a long season it is necessary to make successional sowings, and a sowing should be made now to have plants that will bloom early next spring. They should be grown during the winter close to the roof-glass.

SCHIZANTHUS.—Sow the first batch of Schizanthus seed in 3-inch pots, placing half a

dozen seeds in each pot. Stand the pots in a cold frame, and, as soon as the plants are large enough to handle, thin them to about three in each receptacle. Let them have plenty of light and air, standing them in winter close to the roof-glass in a cold house or pit. When the plants have made plenty of roots shift them into 5-inch pots, and early in spring, if large specimens are required, shift them again into 7 or 8-inch pots, and grow them in a cool house until they flower. Another small sowing may be made in a month's time.

SALVIA SPLENDENS.—The plants are growing freely, and strict attention must be given to watering and feeding the roots, also syringing the foliage. Do not stop the plants after this date, and make sure that the water is well applied with the syringe to the undersides of the leaves, as this is where red spider attacks the plants first. Insects rarely attack these, or indeed other plants, if the cultural treatment is satisfactory, therefore every effort should be made to maintain healthy conditions. One of the chief essentials to success in the cultivation of plants under glass is care in the application of water to both roots and foliage. The effects of careless watering and syringing of plants may not be noticed for a time, but they will be apparent later.

SHADING.—The time is at hand when it will be necessary to reduce or discontinue the shading of glasshouses. The shading material should never be allowed to remain on the glass after it can be dispensed with, that is, after the sun's power has so far waned that it will not injure the leaves. Span-roofed houses facing north or east do not require shading either so early or so late in the season as those facing south or west, or lean-to houses facing due south.

THE ORCHID HOUSES.

By T. W. BAISCOE, Gardener to W. R. LYSICHT, Esq., Castleford, Chapstow, Gloucestershire.

DISA.—*Disa grandiflora*, *D. racemosa*, *D. tripetaloides*, and the hybrids *kewensis*, *langleyensis*, *Luna*, and *Veitchii*, constitute a charming series of terrestrial Orchids, well adapted for growing in a cool house. The cultivation of the plants does not appear to be fully understood, but there is no difficulty in growing those of the *D. Luna* type. If the new *D. Blackii* proves to be easy of cultivation, these *Disas* may find favour in many collections. The chief causes of failure are a close, stuffy atmosphere, and re-potting at the wrong season. *D. Luna* and some of the other hybrids flower slightly in advance of *D. grandiflora*, and need attention at the root during the present month. *Disas* have no decided resting season; they are practically perpetual growers, and for this reason drought at any time is harmful. Ordinary flower-pots are the best receptacles, and should be filled one-fourth of their depth with drainage material. A suitable rooting medium consists of rich fibrous loam, with a little peat or *Osmunda*-fibre, and *Sphagnum*-moss added. The soil and fibre should be used in a lumpy condition. Make the soil fairly firm, and surface it with live *Sphagnum*-moss, which will tend to keep the roots moist. Plants that are healthy should be shifted into pots two sizes larger than the old ones, taking care not to disturb the tubers too much. Large specimens with small, weak growths should be divided into several pieces. If the portions are placed in small pots with a few crushed crocks incorporated with the compost, they will soon become re-established, and later may be shifted into larger receptacles. They will develop into healthy flowering plants in two years, and eventually make specimens that will produce several flower-scapes. For a few weeks after they are disturbed water the roots with extra care, but when they have grown freely give copious supplies of moisture. Grow the plants in the cooler end of the *Odontoglossum* house, directly beneath a ventilator, for an abundance of fresh air is essential. The ventilator should be open more or less, according to the weather, both day and night. Plunge the pots in a bed of moss or any moisture-holding material, to keep the roots damp. During bright, hot

weather, spray the plants lightly overhead. Plants that are not re-potted and have filled their pots with roots should be fed from time to time with weak liquid manure made from cow-dung. When the house is vaporised with XL All or any other fumigant, it is advisable to remove the Disas until the fumes have escaped, and this remark applies more especially to the time when the plants are growing freely. Thrips are occasionally troublesome, but spraying with an insecticide will generally destroy them, or the plants may be dipped in an insecticide. Insect pests must be watched for closely when the new growth is pushing through the soil, for at that stage they will do irreparable damage, causing the shoot to be stunted for the rest of its career. The plants of the section of Disa of which *D. graminifolia* may be cited as an example are somewhat difficult to cultivate, and are rarely seen in collections. They have been termed heath plants, and should be potted in peat and sand. Whilst in active growth the roots should be kept moderately moist, but when growth is completed and the foliage decayed, the plants should be rested by keeping the roots quite dry.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCCHILD), Buckinghamshire.

WALL FRUIT.—Continue to nail or tie the shoots of wall trees, remove all surplus growths, and stop all gross ones. Give Apricots, Peaches and Nectarines constant attention, as the trees promise to continue growing late in the season, owing to the wet weather. Make secure the leading shoots of Pears, Apples and Plums, and pinch back closely all foreright growths. Protect ripening fruit from insects; earwigs, woodlice, flies and wasps are becoming very troublesome. Cover the trees with hexagon netting and hang on the branches wide-mouthed bottles partly filled with some sweet liquid, such as sweetened beer, or treacle and water. Attend to the gathering of Plums as they ripen, especially in showery weather, as the fruits soon crack and become spoiled after heavy rains.

NUTS.—Filberts and other nuts are swelling fast, and the prompt removal of suckers as they appear at the base of the bushes will assist their development. The trees quickly respond to liberal treatment, such as an occasional application of liquid manure at the roots.

APPLES AND PEARS.—If not already done, remove at once all superfluous shoots from espalier, dwarf, pyramid, and standard trees. Not a single shoot that will not be wanted next year should be retained after this date, as there is now no danger of the buds at the base of the shoots being forced into growth. Attend to the tying of the leading shoots of espalier trees. Grafts that were inserted on old trees should be tied securely to stakes, to prevent them being broken by autumn gales.

STRAWBERRIES.—Keep all runners removed from the plants, and, if necessary, mulch the surface of the beds with a thick layer of half-decayed manure. Forced plants that have been set out in beds for fruiting next season should have all flower-trusses removed as they appear. Autumn-fruiting varieties are growing vigorously, producing an abundance of foliage. Remove the runners until the fruit commences to swell, encouraging the trusses to rise above the foliage in order that the berries may be exposed to the sun. Should abnormally wet weather prevail during the ripening period, cover the beds with movable lights, keeping the glass well above the foliage, to allow the air to circulate amongst the plants freely.

MORELLO CHERRIES.—The crop of Morello Cherries should be retarded as far as possible, taking care to protect the fruits from damage by birds and insects. Fruits required for bottling or preserving should be gathered on a fine day, when perfectly dry, and should not be over-ripe. Trees from which the fruits have been gathered should be cleansed of insect pests by syringing with soft soap and water, at a strength of about 1 ounce of soap to 1 gallon of water.

GENERAL REMARKS.—When the crops of Loganberries, Brambles, and similar fruits are gathered, cut out the old fruiting growths and treat the plants generally as in the case of the Raspberry. The present is the best time for making notes of trees that require root-pruning or lifting; the present condition of each tree will indicate very clearly the extent to which these operations are necessary. Trees for planting in the coming autumn should be selected in the nursery, which should be visited for the purpose. It is much better to make the selection before the leaves have fallen, for the general health of the trees can be better determined before defoliation.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

HERBACEOUS PHLOXES.—Border Phloxes have done splendidly this season; the rains of July fell just when root-moisture was of great value, whilst the subsequent dull weather caused the blooming period to be prolonged. Before the plants pass out of bloom notes should be made of varieties of special merit, with a view to increasing the stock of these later, should this be desired, by division of the roots. By planting as soon as the plants have finished blooming the roots will become re-established quickly, and with the aid of a slight mulching later they will come safely through the winter. Phloxes are gross feeders, and repay for planting in deep, well-manured soil. They are very suitable for growing in beds or borders, by the waterside, in the foregrounds of shrubberies or skirting woodlands. The two last positions may be chosen for older, though still favoured, varieties, such as *Coquelicot* and *Eclairer*, and the beds and borders devoted to the newer and improved sorts. There are numerous varieties; a selection of the newer, choicer ones includes *Mrs. A. W. Alder*, *Doreen*, *America*, *Loki*, *Wilbur Wright*, *Mrs. H. J. Jones*, *Frank Bouskell*, *F. W. Mander*, *John Meakins*, and *Mrs. G. F. Richardson*, these ranging in shade from pale pink to carmine; *F. Richard Gross*, white and carmine; and *Gloire de Marc*, blue.

EREMURUS.—Now that the foliage of *Eremurus* has died down, the work of planting or transplanting may be undertaken. The plants are best left undisturbed for several years, but as each plant, in time, forms several crowns and the flower-spikes become smaller each succeeding season, it is advisable to lift and separate the crowns by gently pulling them apart. Perfect drainage is essential to success, and the situation must be sheltered from cold winds of early spring. Choose a border protected on the north and north-east by an ever-green hedge, which provides a good background for the stately flower-spikes and affords the necessary shelter. Spaces among shrubs also provide excellent positions for planting. Light, sandy loam, with manure incorporated deeply, forms a suitable staple. Make holes of sufficient width and depth to allow the roots to be spread out horizontally; work dry soil and sand amongst the latter, which are very brittle, and then fill the holes with the excavated soil, the crowns to be 6 inches below the surface. Protect the young growths from spring frost; inverted flower-pots are frequently used for the purpose.

LILIUM CANDIDUM.—Early planting is necessary for success with the *Madonna Lily*, therefore the bulbs should be obtained at once. They will grow best in well-drained, sandy loam. Only just cover the bulbs with soil. When this *Lily* is established and doing well it is advisable not to disturb the plants for several years. In many cottage gardens magnificent clumps have been known to flourish for a very long time. Where it is desirable to transplant through overcrowding or deterioration, this operation should be done now. The bulbs will soon commence to develop leaves, which remain green throughout winter.

FRITILLARIA.—*Fritillarias* require to be planted early. The *Crown Imperial* is well worth a place among dwarf shrubs, and is best

planted in small groups. *F. Meleagris*, "Snake's Head," is useful for naturalising in grass. Examples of how well they do in this way may be seen in moist meadows near Cricklade, Wiltshire, and, I believe, around Oxford.

GLADIOLI.—Early-flowering *Gladioli* are particularly useful for furnishing cut blooms, which last fresh a long time. For this purpose bulbs should be planted freely in the reserve garden, in beds which are well drained. Set the bulbs 4 inches to 6 inches deep and in rows made 12 inches apart. In cold districts the growths will need protection during unfavourable weather, and nothing is better for the purpose than dry Bracken, which keeps light and airy. Good varieties are *Ackermannii*, *Delicatissima*, *Salmon Queen*, *Ne Plus Ultra* and *Colvillei*.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

WINTER TOMATOS.—Plants which are intended to produce fruits in winter should be ready for transference into 10-inch pots, provided with good drainage. The soil should consist of a mixture of three parts turfy loam, one part decayed horse manure, and a sprinkling of old lime rubble. Pot moderately firm, leaving sufficient space in each pot for future top-dressing. Secure the stems to suitable stakes at once, for they should never be allowed to fall over. Remove all the side shoots as they appear. Water the soil sparingly until the roots are growing freely, when liberal supplies of moisture should be afforded. Grow the plants in a well-ventilated house with a view to securing sturdy growth and a good set of fruits. Plants from which ripe Tomatos are being gathered will be benefited by a top-dressing of loam and concentrated fertiliser, pressing the materials tightly on the surface of the bed. Remove all decaying foliage and worthless growth, and ventilate the house freely whenever the weather is favourable.

CUCUMBERS.—Material should be collected and prepared for making the beds in which to plant Cucumbers for winter cropping. Before the soil is brought indoors, cleanse the house and fumigate it. The beds may be arranged to within 2 feet of the roof-glass, and small mounds of a mixture of loam and leaf-mould placed 5 feet apart on the surface. When the soil has become warmed through, planting may be done. A few boles made in each mound will prevent an excess of heat through fermentation, and thus obviate the danger of harming the roots from this cause. When the plants reach the trellis the leading stems should be stopped; this will result in two or more leading shoots developing, and these secondary leaders must be tied carefully and stopped, until the trellis becomes filled with short-jointed, fruitful growth. Only a small quantity of soil is necessary at the start, to be supplemented later by top-dressings. Ventilate the house with great care, and promote a humid atmosphere by syringing at night and morning.

LEEKs.—Plants which are growing freely may be assisted by a little fertiliser, but do not use manure water, as the soil is very wet already. Further plantations may be made to furnish roots for use next spring.

FRENCH BEANS.—Plant French Beans in pits where a little fire-heat can be used if necessary. Sow in rows made 2 feet apart, and cover the seeds with 1 inch of fine soil. Slugs are sometimes troublesome to this crop, and must be guarded against; soot and lime act as good deterrents to this pest. The lights should not be used where Beans are growing in cold pits until they are absolutely necessary. If 7-inch pots are available they may be filled with rich soil and Beans grown with a view to producing pods in November. Crook the pots sparingly, and use a compost consisting of three parts turfy loam and one part of decayed horse droppings. Make the soil moderately firm, and place six seeds in each pot, thinning the seedlings if necessary. The plants may be grown in a pit or house, and should be placed close to the roof-glass. Protection is only necessary for the time being, the aim being to secure strong, healthy plants that will crop late in the autumn.

EDITORIAL NOTICE.

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

Editors and Publisher. — Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the Editors. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR SEPTEMBER.

WEDNESDAY, SEPTEMBER 1—
Glasgow and W. of Scotland Soc. Show (2 days).
THURSDAY, SEPTEMBER 2—
Manchester and N. of England Orchid Soc. meet.
TUESDAY, SEPTEMBER 7—
Scottish Hort. Assoc. Meet.
WEDNESDAY, SEPTEMBER 8—
Royal Caledonian Hort. Soc. Show, in Waverley Market, Edinburgh (2 days).
THURSDAY, SEPTEMBER 9—
Dickson and Robinson's Vegetable Show at Manchester (2 days). B.G.A. (Watford Branch) meet. Lecture by Cyril Harding.
MONDAY, SEPTEMBER 13—
United Hort. Ben. and Prov. Soc. Com. meet.
TUESDAY, SEPTEMBER 14—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Dahlias," by Mr. J. Riding). (National Dahlia Soc. Combined Show.)
THURSDAY, SEPTEMBER 16—
Manchester and N. of Eng. Orchid Soc. meet. Nat. Rose Soc. Autumn Show at R.H.S. Hall, Westminster.
MONDAY, SEPTEMBER 20—
Nat. Chrys. Soc. Executive and Floral Coms. meet.
TUESDAY, SEPTEMBER 28—
Roy. Hort. Soc. Coms. meet. Vegetable Show (Lecture at 3 p.m. on "Early Flowering Chrysanthemums," by Mr. Robert Fife).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 59.8.

ACTUAL TEMPERATURE:—
Gardener's Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, August 26 (10 a.m.). Bar. 29.8. Temp. 68°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 10.30.
WEDNESDAY—
Special sale of Bulbs for the Trade, by Protheroe and Morris, at 1.

The many friends of Frederick Manson Bailey, Colonial Botanist to the Queensland Government, will learn with deep regret that the veteran Australian botanist is no more. He passed away on June 25 at the advanced age of 88.

Bailey came of a race of gardeners, and he leaves behind him in the person of Mr. J. F. Bailey, Director of the Brisbane Botanic Gardens, one who maintains worthily the high traditions of the family. To those whose fixed habit of thought is to regard Australia as a "new" country it will come as a surprise that that State has known how to make use of the scientific services of three generations of this distinguished family. So long ago as 1838 John Bailey left the then suburban fields of Hackney and set sail on the *Buckinghamshire* for the Antipodes. This vessel, a frigate of 1,500 tons, was the largest that had ever sailed to the Antipodes. By a happy omen the ship anchored in Holdfast Bay, S. Australia, and the family that it bore held fast, and have made good in the land of their adoption. On his

arrival in the Crown Colony, as it then was, John, the father of the subject of this memoir, became Government Botanist and laid out the first Botanic garden in the Southern capital. But, as so often happens to new States, hard times befell S. Australia, and John Bailey had to resign his position and re-enter the nursery business. This he did in association with his son Manson. Then came, during the 50's, the gold rush in Victoria, and young Manson Bailey, exchanging nursery spade for miner's pick, packed off to Bendigo. But before he had achieved success he was recalled, by the illness of his father, to Adelaide. After some three years, however, adventure claimed him again, and he journeyed to New Zealand, where he took up land in the Hutt Valley. The Maori war broke out, and Manson Bailey was perforce compelled to trek once more. He journeyed to Sydney, and after a short stay in New South Wales went on to Brisbane.



THE LATE FREDERICK MANSON BAILEY.

In 1861 he set up a seed business, but the times were unpropitious, and the venture did not prosper. His opportunity came in 1875, when he was appointed by the Queensland Government to take part in an enquiry into the causes of the diseases affecting stock and crops. In the course of his investigations Manson Bailey published valuable articles on the native Grasses of Queensland. His next official post was curator of the Botanic section of the Queensland Museum, and in 1881 he became Colonial Botanist of Queensland, which position he held at the time of his death.

The work of this important post was thoroughly congenial to him, and he travelled widely, amassing material not only for his great work on the Flora of Queensland, but also for valuable publications on the timber resources of the country. His knowledge of plants was profound, and the services which he rendered to the State were the greater owing to the

fact that he combined a sound knowledge of systematic botany with a no less sound experience of practical gardening—a combination as fertile as it is rare.

After thirty years, in 1911 his services received official recognition in the award of a C.M.G. But he who would understand the stalwart nature of the man must appreciate not only his devoted work and numerous publications, but also his behaviour in adversity. When in the nineties retrenchment became imperative, the position of Colonial Botanist was abolished. Imperturbably Manson Bailey continued to attend his office and discharge what used to be his duties—observing that, pay or no pay, the work must go on. The public, wiser than the politicians, intervened, and Bailey was reinstated.

In this episode we find the measure of his magnanimity, and though Manson Bailey will be remembered by the wealth of his contributions to systematic and economic Botany, those who look at life whole will not forget this fine example of how a great-hearted man may meet and disarm adversity.

He died full of years and honours, and his virtues are commemorated not only by his published works, but also by the tributes of his fellow-citizens, of which no finer has appeared than that published in the *Brisbane Courier*. From it many of the facts cited in this memoir have been taken.

CODONOPSIS CONVULVULACEA.—Most of the *Codonopsis* species are remarkable for their strong, unpleasant smell when bruised, the best known, perhaps, being the Himalayan *C. ovata*. There are some six or more species in cultivation, some with flowers of great beauty. *C. convolvulacea* has a wide area of distribution, being found wild in Western China, Tibet and the Himalayas. The plant illustrated in fig. 45 was raised from seeds sent to Kew by Max Leichtlin in 1906, and it flowered first in August, 1907. The seeds were stated to have been received from the North-Western Himalayas, although the species was not previously known to have been a native of that region. *C. convolvulacea* is a perennial herb, with slender, smooth, twining stems, sparingly branched. The leaves are membranous, mostly alternate, ovate-lanceolate in shape, and from 1 to 2 inches long. The deep lavender-blue flowers are about 3 inches across, with the lobes divided almost to the base. They are produced on long pedicels, and are both terminal and axillary, but always solitary. Although the Kew plant has flowered yearly since 1907, no seed has ripened, but this year the capsules look promising. Only one stem is produced annually from the woody rootstock, so that it has not been possible to increase the stock to test the plant's hardiness, although there is little doubt that it would survive our winters, seeing that it came from the Himalayas.

HAYWARDS HEATH HORTICULTURAL SHOW.—

A very successful show was held at Haywards Heath, under the auspices of the local horticultural society, on Bank Holiday. The net profit amounted to £100, which is being sent to the R.H.S. as a donation to the War Horticultural Relief Fund, and nearly a ton of fruit and vegetables was forwarded for the use of the Navy. It may be added that the Society makes fortnightly collections of fruit and vegetables on behalf of the Navy, and this example might well be followed by other horticultural societies.

NEW LABORATORY AT KEW.—A new laboratory of plant pathology at Kew Gardens has been opened for use. The building has been formed from two cottages on Kew Green, formerly known as Gumley and Chestnut Cottages, which were originally united, and used, it is believed, as residences for ladies of the bed-chamber when QUEEN CHARLOTTE occupied Kew Palace. Mr. A. D. COTTON, assistant in the herbarium, has been promoted to a first-class assistantship in connection with the new laboratory, and Mr. W. B. BRIERLEY, of Manchester University, has also been appointed a first-class assistant. A temporary assistant and a preparer comprise the staff up to the present. A portion of the laboratory is being used temporarily by the entomologist of the Board of Agriculture, so that opportunity is also afforded for the investigation of plant diseases caused by insects.

APPOINTMENT.—Mr. M. T. DAWE, formerly a member of the gardening staff of the Royal Botanic Gardens, Kew, and lately Director of Agriculture, Portuguese East Africa, has been ap-

cluding one of the sub-foremen, have enlisted. As two men have been discharged as unfit, the number of Kew employees serving with His Majesty's forces is now ninety-two. One young gardener has recently received a commission.

—Messrs. WEBB AND SONS, LTD., seedsmen, Stourbridge, recently received the following communication from the commandant of one of the large base camps for British troops in France:—"I write to thank you again for the flower seeds you sent for the soldiers; they all came up and have made a splendid show."

—Pte. H. PENTON, King's Shropshire Light Infantry, eldest son of Mr. W. PENTON, Rooknest Gardens, Godstone, Surrey, was killed on the 12th inst. when on duty in the trenches. He joined the army in September last, but had only been at the front three weeks. Private PENTON was held in high esteem in his regiment, as is fully shown by the letters received from the commanding officers, Major WELCH and Lieutenant SIDEBOTTOM, and the chaplain, Rev. M. W. T. CONRAN.

mineral origin. He finds that petroleum-bearing rocks are invariably sedimentary, and never present characteristics suggesting an igneous type. The oil-bearing rocks contain deposits denoting alternations of marine and lagunary conditions. During the lagunary periods there was an accumulation of organic debris, the remains of animals and vegetables which had either lived or died there. The marine recurrences brought impermeable sediments which covered the debris and protected them from the oxidising action of the air, thus permitting them to become bituminous.

THE VALUE OF NURSERY TRIALS.—Few realise the amount of time and labour expended by seed firms in keeping their strains of seeds true to name, and of unfailing germination. The placing of a new annual, for instance, is not simply a matter of growing the anticipated quantity of seeds and giving the novelty prominence in the next issue of the catalogue. The novelty must first be tested to make sure that it is fixed and true, hence the need for the trials which are

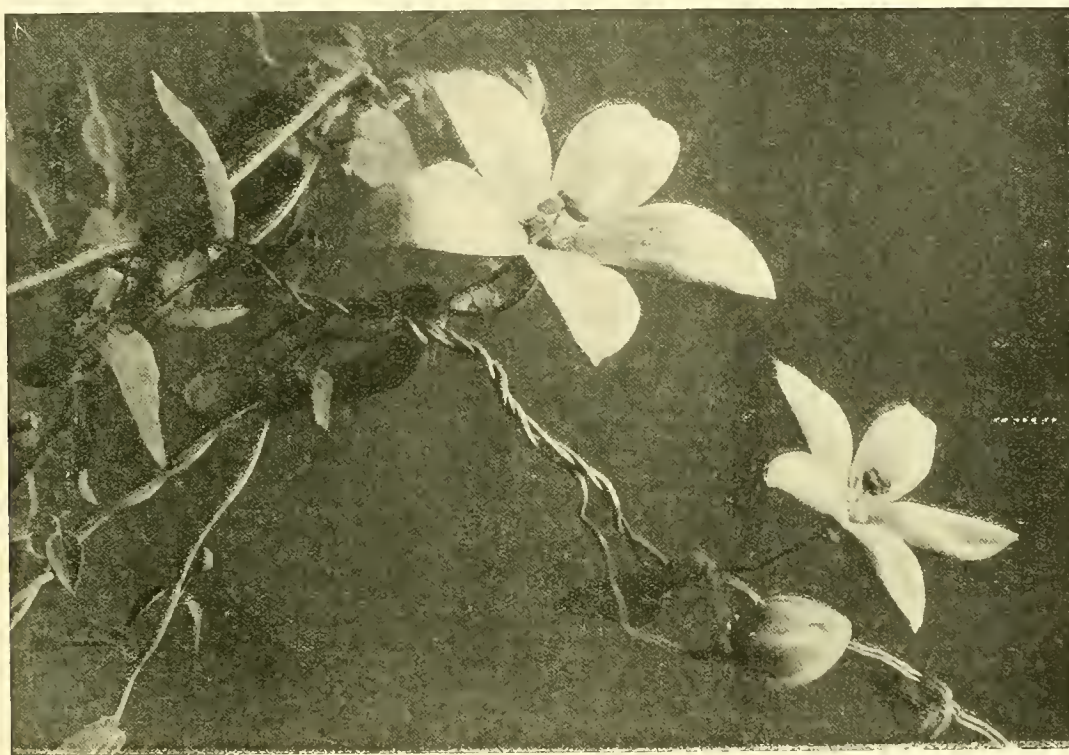


FIG. 45.—CODONOPSIS CONVULVULACEA: COLOUR OF FLOWERS LAVENDER-BLUE.

(See p. 136.)

[Photograph by W. Irving.]

pointed, on the recommendation of Kew, Agricultural Adviser to the Government of Columbia.

WAR ITEMS.—The late Able-seaman WILLIAM CHARLES WILLIAMS, V.C., was the son of Mr. W. WILLIAMS, foreman at Messrs. PILLINGER'S nursery, Chepstow, where he has been employed for more than twenty-seven years. The Victoria Cross was awarded for gallant conduct at the landing at V Beach, on the Gallipoli Peninsula. A member of the crew of H.M.S. *Hussar*, WILLIAMS assisted in bringing together the lighters which had broken adrift, and held on to a line in the water for more than an hour under heavy fire, until killed.

—We learn from the *Kew Bulletin* that seventeen more employees of the Royal Botanic Gardens have enlisted or re-enlisted. Nine members of the uniform section, including Corporal Constable J. SEALY and Laboratory Porter J. A. MINGAY, have re-enlisted, the two latter to serve in the Army Ordnance Corps; three labourers, a carter and four young gardeners, in-

—Mr. ROBERT PRINGLE, the head gardener at High Canons, Barnet, writes us:—"I regret to inform you that Lance-Corporal ARTHUR LONG, Royal Fusiliers (Machine Gun Section), has been killed in the Dardanelles. Previous to the war he was engaged in these gardens, and was much valued by his employers."

WEEDS AND WAR.—Shortage of agricultural labour is responsible for no small amount of neglect, and it is to be feared that agricultural yields will be affected adversely. It is reported, for example, that Charlock has been more than usually rife in our Corn fields, and our contemporary, *Knowledge*, publishes a striking photograph of Charlock in a field of Oats. It cannot be too often repeated that this weed may be destroyed by timely spraying with sulphate of copper or of iron. Details of the method have been published already in these pages.

ORIGIN OF PETROLEUM.—According to investigations carried out by M. JEAN CHATAUD, petroleum appears to be of organic and not

constantly being made. Records are made and kept of the behaviour of each sort from the seed-sowing to the harvest. It would be quite easy to "arrange" the trials for visitors and to show every variety as being absolutely true. But this is not the object. To take the compact *Lobelias*, for instance. The trials could easily be rogued whilst the plants are in the seedling stage, for even then any strays of the gracilis type can easily be detected, but to find the true percentage of purity all seedlings in the trials must be pricked out without the slightest selection. Again, with *Antirrhinums*, the discerning eye can detect at an early stage the rogues, and it would be an easy matter to replace them with type plants, but the rogues must remain, so that the correct percentage may be recorded. Then follow two or three, or even more, years of selection, until at least 98 per cent. of the new variety come true, before it finds a place in the catalogue. There are, naturally, many disappointments. Some beautiful and desirable new varieties of annuals refuse to come true in the

high percentage which is insisted upon, so these are finally, but reluctantly, discarded. Other equally charming varieties persistently refuse to seed freely, and these also have to be eliminated.

A FUNGUS PARASITE OF RADISH AND BEET.—The fungus which causes damping off of Sugar Beet seedlings and black rot of Radish has been investigated by Mr. H. A. Edson (*Journal of Agricultural Research*, Department of Agriculture, Washington, No. 4, Vol. IV., July 15, 1915), who refers it to a new genus, *Rheosporangium*, and names it *R. aphanidermatum*. The general symptoms produced by the parasite resemble those set up by *Pythium debaryanum*, and the fungus belongs to the Saprolegniaceae.

NURSERY STOCK IMPORTS TO U.S.A.—Estimates made by leading American nurserymen and published in the *National Nurseryman* indicate that the supply of French fruit stocks expected via Bordeaux will be normal, and freight rates no higher than last year. French women and children are doing the work of the men called to the colours. Of English shipments, Gooseberries are very deficient owing to quarantine regulations. There will be no shipments from Germany, owing to the British blockade by "Order in Council."

NEW YORK BOTANIC GARDEN.—The New York Botanic Garden in Bronx Park will celebrate its twentieth anniversary in the week beginning September 6 next. Meetings will be held in the gardens and visits made to Staten Island for the study of the coastal flora, to the Pine barrens of New Jersey, and to the Brooklyn Botanical Garden.

WALTER HOOD FITCH.—The last number issued of the *Kew Bulletin* contains a condensed, partially classified bibliography of the pictorial botany of the late W. H. Fitch, of whom an obituary notice appeared in the *Gardeners' Chronicle*, January 23, 1892. We learn from the brief biographical sketch which precedes the enumeration in the *Kew Bulletin*, that the activity of this accomplished botanical artist covered a period of about fifty-five years, and embraced some 10,000 figures of plants, or portions of plants, apart from dissections, illustrating almost every known family in the vegetable kingdom and almost every British botanical work published during the period which may be termed the reign of Fitch, namely, from 1834 to 1888. Disregarding the bulky and expensive illustrated botanical and horticultural books of such early authors as BRADLEY, DILLENIUS, GERARD, MARTYN, MILLER and others, the *Botanical Magazine*, started by WILLIAM CURTIS in 1787, may be regarded as the foundation of periodical illustrated garden botany at a moderate price. We specially name the *Botanical Magazine*, because from its commencement till the present day it has been almost entirely devoted to cultivated plants, and because W. H. Fitch was its almost sole artist for upwards of forty years, contributing about 2,900 coloured plates. It may be repeated here that Sir WILLIAM HOOKER discovered W. H. Fitch working for a Glasgow firm of calico printers, and procured his release by redeeming his indentures. At first Fitch was almost entirely engaged on Sir WILLIAM HOOKER's publications, including the *Icones Plantarum*, various journals, and illustrated books on Ferns. Then came Sir JOSEPH HOOKER's *Botany of Ross's Antarctic Voyage*, *Sikkim Rhododendrons*, *Himalayan Plants*, and other splendidly illustrated books, and during Fitch's long active career "practically every illustrated publication, official and unofficial, issued from Kew was adorned by his pencil." Fitch was also a prolific contributor to the leading horticultural periodicals, including the *Gardeners' Chronicle*, from 1869 to 1883. Prominent among his work in these pages is a series of folio coloured plates representing groups of Orchids, Camellias,

Gladioli, Tulips, Lilies, Calceolarias, Roses and Plums. Notable among his larger works on cultivated plants are: *The Genus Lilium* (ELWES), *Select Orchidaceous Plants* (WARNER), *Odontoglossum* (BATEMAN), and *Garden Ferns* (HOOKER). He was also a master in reduced representations on wood, and in this way illustrated the various *Kew Guides*, *The Treasury of Botany*, *The Imperial Bible Dictionary*, and *Bentham's Illustrated Handbook of the British Flora*, the last numbering 1,295 figures. By some mischance WILSON SAUNDERS's *Refugium Botanicum* seems to have been omitted from the list. This little-known publication was established for the pictorial record of such cultivated plants as were not sufficiently ornamental for general purposes and not easily dried. The number of headings in the *Bibliography* is nearly 150, and it should be remembered that the headings cover from 1 to 2,900 plates each. We have said nothing except in general terms of the quality of W. H. Fitch's work, leaving the work to speak for itself, fortified by the appreciative testimony of the two HOOKERS, Sir WILLIAM and Sir JOSEPH, with whom he was more intimately associated.

RETIREMENT OF MR. W. POPE.—Mr. W. POPE, gardener at The Willows, Wargrave, Berkshire, for the past forty-five years, has relinquished his post. During the time he has worked at The Willows he has served five families. Mr. POPE was a keen gardener, and a prominent member of the Wargrave Gardeners' Association, frequently exhibiting at the Society's meetings. Local affairs attracted his attention, and for some years he served as a parish councillor. Through the efforts of Mr. POPE the Gardeners' Royal Benevolent Institution has benefited to the extent of £173 15s. 6d.

THE CORN CROPS.—The Board of Agriculture and Fisheries has received the following information from the International Agricultural Institute:—The total production of crops in 1915 in the undermentioned countries is estimated as follows: Wheat, in the United Kingdom, Italy, Spain, Switzerland, Russia in Europe, India, Japan, Tunis, United States, and Canada (winter Wheat only), 1,383,889,000 cwt., or 17.9 per cent. above last year's production. Barley, in the same countries, except India and Canada, 414,411,000 cwt., or 19 per cent. above last year's production. Oats, in the same countries as Barley, except Japan, 755,136,000 cwt., or 24.1 per cent. above last year's production. Rye, in the same countries as for Oats, except England, Scotland, and Tunis, 514,365,000 cwt., or 18.7 per cent. above last year's production. The estimated production of Maize in the United States is 1,458,993,000 cwt., and of Potatoes 230,899,000 cwt., or 9.2 and 6.2 per cent. respectively above last year's production.

VARIEGATED PELARGONIUMS IN FASHION IN JAPAN.—The latest floral fashion in Japan is the variegated Pelargonium, and the Japanese are said to be paying considerable sums for plants with well-variegated leaves.

GARDEN SEEDS FOR QUEENSLAND.—The *Queensland Agricultural Journal* states that "Owing to the scarcity caused by the war, it is of the utmost importance that seed merchants in Queensland make early arrangements for their next season's supply of vegetable and flower seeds, and those who are in the position to import their own supplies would do well to at once get into correspondence with English firms of repute. It will be a satisfaction to loyal Queenslanders to know that vegetable, flower, and farm root seeds are grown in the South of England on a large scale, many varieties of both vegetable and flower seeds being exported to the Continent and to the United States of America, some of which reach Australia after two profits have been made on them. Even Asters, Ten-week

Stocks, and many other choice flower seeds can be grown to advantage in Essex, where most leading houses have seed farms. Turnip, Cabbage, Beet, Mangel, Swede, Rape, and other seeds are grown in both Kent and Essex, and from there exported all over the world. Cheaper seeds may in some instances be obtained, but better it is impossible to procure; the thing is to get these supplies to Australia at first cost. Such seeds as Canliflowers are grown in Italy, near Naples, and merchants who require large quantities could purchase direct; but for orders of, say, 28 lb. of a variety, London still offers the best market, as the buyer has the assurance that the large firm from whom he purchases has inspected the growing crop, and is satisfied that it is true to name and free from sports. Pictorial flower and vegetable seed packets are printed on a large scale in England. Horticultural sundries, such as flower sticks and wooden labels, can also often be purchased in London of better quality and at lower prices than from Continental houses."

HOME CORRESPONDENCE.

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

THE FLOWERS OF MILTON.—Having long been interested in the references of our great poets to garden flowers, I have read with appreciation Canon Ellacombe's article on the flowers of Milton. Quoting from *Lycidas*, under the heading of "Pansy," Canon Ellacombe gives No. 3 as "the white Pink and the Pansie streak'd with jet." In his *Plant Lore of Shakespeare* he gives almost the same quotation, excepting that jet is spelled jet. Many other authors also give the word streaked; but being desirous of verifying the quotation I recently purchased a small volume entitled *Milton's Minor Poems*, and there the line reads: "The white Pink and the Pansy freak'd with jet." There may not be much difference between streak'd and freak'd, but I should like to be sure what Milton really wrote. Hulme, in *Bards and Blossoms*, gives it as freaked, but the question could only be decided perhaps by a reference to the first edition of *Lycidas*, and that to many of us is inaccessible. C. H. P.

GRAFFED CLEMATIS.—In Sir Herbert Maxwell's review of Mr. Watson's book on *Climbing Plants* I notice a statement that grafting Clematis is not the best method of propagation. My experience is, however, that the stock only serves as a mother for a few months. I have never yet seen a plant more than two years old on which the stock was alive, as the scion roots very freely and is soon self-supporting. It will be interesting to know if any of your readers have ever seen the stock of such plants alive after this period; and even if so, it is, I imagine, the exception rather than the rule. Edward A. Bunyard.

CUCUMBER EVERY DAY.—In reply to Mr. P. Bolt (see page 115) the Cucumber mentioned in my note was not grown for any special purpose such as exhibiting. I have cut several fruits measuring 20 inches in length and 9 inches in circumference from the same plant, which has been in bearing all through the summer. G., Stretton Hall Gardens, Stafford.

—I have never found a variety of Cucumber to equal Every Day, either for small or large gardens. It is far superior to Telegraph. I have grown large specimens of both varieties, not just special ones for show purposes. It would be interesting to know if P. has ever grown plants of Telegraph and Every Day, side by side, in a bed, in pots, and in cold frames. I have always found Every Day give the better results. I have cut large fruits of Every Day this season. R. Jones, Highfield Gardens, Bramley, Leeds.

GARDENERS' WAGES IN WAR-TIME.—Since the commencement of the war the industrial conditions in this country have changed considerably. The cost of living has risen very considerably, and to meet this increased cost

the majority of workers are receiving either increased wages or a war bonus granted by employers, but not so the professional gardener. The wages of gardeners were never very high, and, at the present time, many of them are suffering real hardships in the struggle to make both ends meet. The isolated position of gardeners renders it difficult for them to organise and to put their case collectively for consideration. The Executive of the British Gardeners' Association earnestly asks all employers of gardeners to consider the question of wages. If an increase has not yet been given, we appeal to employers, both private and public, to remedy the omission. *Cyril Harding (General Secretary), British Gardeners' Association, 1, Ulysses Road, Fortune Green, Hampstead.*

"WITCHES BROOM ON THE WILLOW" (see p. 123).—It may interest Mr. A. D. Webster to know that in October, 1906, I showed a Willow "Witches Broom," as Mr. Webster calls it, at a meeting of the Scientific Committee of the R.H.S. (reported in your columns at the time) from the neighbourhood of Buckhurst Hill, in Essex. Two or three years after, Mr. Bowles brought similar specimens from Enfield Lock, where the malformation still persists. Even at that date it seems to have been somewhat widely distributed, although few noticed the curious and often huge bunches hanging in the trees. The tree from which the Enfield specimens came is now dead, whether as a result of the attack of the mite or not is not known. Mr. Miller Christy has recently written an interesting account of the occurrence and distribution of the galls in and about Essex, in which he shows how far the attack has spread since it was first noticed in 1906. *Fred J. Chittenden.*

THE WAR AND THE NURSERY TRADE.—A year ago the President and Council of the Royal Horticultural Society expressed to the Fellows their opinion that in troublous times, such as we are at present passing through, counsels of perfection cannot always be carried into effect. At the same time it is none the less the duty of those who are placed in a responsible position, and who can exercise any influence in the country, to give the best advice in their power, leaving it to the judgment of individuals to act upon it as far as they are able to see fit. The letter further went on to say that it was already evident that not only actual gardeners, but all who in any way were dependent for a living upon horticulture, will be certain to suffer seriously from the indirect effects of the war. It is known how loyally Fellows of the Society responded to this appeal, and nurserymen and seedsmen throughout the country have been deeply grateful for the effort Fellows have made to maintain, as far as they reasonably could, the upkeep of their gardens, adjusted to the times. There has recently appeared in the public Press correspondence urging the entire cessation of all garden expenditure, and though the letters have more pointedly aimed at public parks and gardens, such expressions are apt to be dangerous, inasmuch as the gardening public at large may be likely to interpret and apply them to themselves individually. Indeed, that this is happening is evident from correspondence recently received on the subject from prominent and well-known firms, who tell us that their trade is very seriously depressed, and who point out that an entire cessation of trade means not only temporary financial loss, but the irretrievable sacrifice of many years of labour spent in introducing new and improving older fruits and vegetables for our use, and flowers, trees and shrubs for our solace and enjoyment. They rightly feel that, as they have catered for our highest happiness in times past, it is hardly right that they should now be brought to a position in which they can no longer even retain their employees' services. Most of their younger men have enlisted, and they ask, not for the usual trade, but for just sufficient support to keep them going and to meet current expenses which cannot be suspended. The President and Council feel that in drawing the attention of Fellows to this trade aspect of the question they are but again advising that medium policy which, in the long run, is always the wisest, and Fellows are urged not to forget this when framing their economies. *W. Wilks, Secretary.*

FRENCH NOTES.

ASPARAGUS IN FRANCE.

Most of the Asparagus grown in France is of the Argenteuil variety—early or late—and characterised by the large stalks and closely-overlapping scales. It is propagated solely from seed, and since the plants are unisexual, crossing always occurs, and much care is taken in selecting good parents. For this purpose the best yielders are set apart, and from them Asparagus is not pulled. Hence they flower earlier and risk of pollination from other sources is avoided. Growers often prefer not to raise their own but to buy in young plants from one to two years old. The production of giant forms is a matter of cultivation. Asparagus flourishes in sandy or chalky soils and it is a greedy plant; chemical manures in particular give good results. In the neighbourhood of Paris (Argenteuil) planting is done in March and never in autumn, for the roots in the latter case would rot during the winter. At Argenteuil planting is done in lines 15 inches apart and 1 yard from plant to plant. The plants are put in holes not deeper than 4 to 6 inches, and in the centre of the hole a little mound of soil is disposed to spread out the roots.

THE GARDEN OF THE HORTICULTURAL SOCIETY AT SOISSONS.

News received recently from Soissons gives the information that the very charming garden at Soissons was in part destroyed by the Germans after their retreat on the Aisne. The crime is peculiarly gross, and serves but to demonstrate once again that the difference between culture and Kultur is that between creation and annihilation. This "school-garden," the property of the Horticultural Society at Soissons, was established in 1863, and enlarged in 1890 at the time of the dismantlement of the fortifications of the town. Near the entrance the garden consisted of smooth lawns, fine trees and masses of flowers, beyond which were the botanic garden, glasshouses and fruit garden, and also a lecture hall, library and museum. The garden has suffered already and from the same cause, for in 1870 it was destroyed completely by the Germans, and again in 1879-80 the terrible winter did almost as much damage. The garden plays an important part in the horticultural education of the district, and serves as a centre for the dissemination of knowledge as well as of plants. As symbol of the recuperative powers of France stands the fine male tree of the Canada Poplar. Decapitated in 1870 by a Prussian bullet, it branched vigorously and grew so strongly that last year the spread of its branches was no less than 9 to 10 ares. Another interesting tree is *Ginkgo biloba pendula*. Planted in 1863, its branches cover—or covered—an area of over 30 yards.

EXOTIC FRUITS ON THE RIVIERA.

DR. ROBERTSON PROSCHOWSKY, well known for his zeal in the acclimatation of exotic fruit trees in the Riviera, has published a note (*Bull. Soc. Nat. d'Acclimatation*, May, 1915), containing the results of some interesting experiments carried out in the gardens of the Villa Marguerite at Eze, near Nice.

It is found that *Achras Sapota* grows vigorously and bears fruit; the Canary Banana, *Musa Cavendishii*, and its several varieties, fruit well; the different forms of *Psidium Guajava* produce abundant fruit. So also does *Passiflora quadrangularis*; and *Aegle marmelos*, which fails to survive the winter in Dr. Proschowsky's garden, is perfectly hardy at Eze. Close to the property of Mr. Bergous at Eze was, until recently, a plant of *Cocos nucifera*, which had been established in the open for some years. Its growth was slow, and after 10 years was only 3 metres high; but it developed normally, and died not from cold but from neglect. *A. M.*

NOTES FROM AUSTRALIA.

A DISMAL SEASON.

THE season 1914-15 will live long in the memory of Australians, quite apart from the war and its consequent sacrifices. Our winter of 1914 was almost devoid of rains, and spring began with dry waterholes and creeks, the natural grasses, so plentiful in our average spring, being almost non-existent. The spring continued dry, and only in a few isolated districts was there anything worthy of the name of a Wheat crop. In our own State an area of 1,000,000 acres yielded three-quarters of a bushel per acre, the usual yield being 10 to 12 bushels, the total harvest of Australian Wheat being over 100,000,000 bushels below the average. Fruit crops also were scanty. Plums, usually valued at £5 per ton, were eagerly bought at £13, whilst Apples were a complete failure in 80 per cent. of the districts. The hand-feeding of stock became a necessity, and as a result of the enormous demand, the price of chaff, hay and bran rose beyond the reach of thousands of farmers. Thousands of sheep were sold for what they would fetch, 1s. per head being a common price and 9d. per head being recorded in some cases. Wheat was 8s. 6d. per 60lb. bushel, bran 2s. 2d. per bushel of 20 lbs., chaff £15 per ton, and flour £17 10s. per ton. To-day good meat is worth 8d. to 1s. 1d. per lb., bread 9d. to 10d. the 4lb. loaf, and we are importing butter from U.S.A. and England and retailing it at 2s. to 2s. 2d. per lb. Potatoes were an excellent crop, but they have been used for stock-feed to such an extent that their market price is £10 per ton.

However, a record acreage was again sown with grain, and good rains falling during April, and continuing since then, the aspect changed; within a fortnight the country became green with shooting grass and sprouting grain.

This change of weather conditions, so necessary to the growth of herbage, proved fatal to large numbers of poorly-conditioned horses, cattle and sheep, and the lambing season being May to June, the losses of sheep have been enormous, estimates varying from 15 to 25 millions of sheep alone. This loss of grown sheep, taken together with an anticipated lambing percentage of 15 to 30 per cent. (as against 75 to 85 per cent. normal), will require several years to replace, and already the question of "prohibiting the slaughtering of female sheep and cattle" has been raised in our press.

BROKEN TULIPS.

REFERRING to the many notes on the "breaking" of Tulips in the issues for May and June last, here we consider the breaking of Darwins to be due (1) to the presence of too much lime in soil, (2) to a deficiency of potash, (3) to the soil being impoverished or too poor in the first instance.

A neighbour whose garden is on a basaltic soil imported Tulips the same season as myself; his Darwins have all broken, whilst my bulbs—now some 5,000—grown in soil of granitic character, have not yet shown signs of breaking. Since being imported the bulbs have experienced both a very wet and a very dry season, the last season being the driest on record.

I have here some 60,000 Tulips, and find that the early singles break whenever planted in "poor" soil, whilst cottage varieties very seldom do so. Possibly some of your readers may have noticed the different behaviour of Tulips in limestone and granite soils. *Gilbert Errey, Errey's P.O., Victoria.*

PUBLICATIONS RECEIVED.—*Onion Cultivation*. (Bulletin No. 78, issued by the Commissioner of Agriculture, Imperial Department of Agriculture, for the West Indies.) Price 3d.—*Annual Report on the Department of Agriculture, Jamaica*. (Jamaica: Government Printing Office, Kingston.)

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLII).

L'APPROVISIONNEMENT DES PRODUITS HORTICOLES EN ANGLETERRE ET LA GUERRE.

De tous côtés la guerre a occasionné une véritable désorganisation dans l'approvisionnement en denrées alimentaires. Même en Angleterre, pays si favorablement organisé pour continuer son trafic avec les continents d'outre mer, mais tributaire dans une mesure aussi large de l'étranger, on s'est vivement préoccupé des mesures à prendre pour assurer l'alimentation de la population. Aujourd'hui les craintes se dissipent, car malgré tout, les différents services se trouvent très peu affectés.

Pour l'horticulture dont la prospérité a, au cours des dernières décades, été si intimement liée au commerce international, la question se posait sous un point de vue spécial : il fallait craindre non pas la pénurie, mais l'impossibilité de se débarrasser de produits dont aucun n'est réellement indispensable, certains paraissant même devoir être rejetés dès que la moindre crise économique se fait sentir. Et cependant malgré le cataclysme qui s'est abattu sur le monde civilisé, la production horticole—prise dans son sens le plus large—n'est pas trop atteinte.

En Angleterre la situation ne semble pas brillante pour l'industrie de la plante et de la fleur. Le compartiment des fleurs à Covent Garden est moins animé qu'autrefois et des plantes de serre trouvent difficilement acquéreur : on peut sans grand inconvénient prolonger quelque peu le délai au bout duquel les plantes décoratives sont renouvelées dans les appartements. Par contre, pour les produits qui ont un rapport avec l'alimentation—fruits et légumes—le marché est très favorable. La demande de ces articles n'a certainement pas fléchi à la suite de la guerre. Pour certains même, notamment les fruits mous, susceptibles d'être mis en conserve, les cours ont été extrêmement rémunérateurs. Comparant la situation à celle que l'on observe dans les pays neutres, on arrive à la conclusion que les fruits et légumes sont de moins en moins produits de luxe, et si l'on excepte les articles de haute primeur, on peut dire qu'il faut des circonstances particulièrement malheureuses, comme celles que la Belgique traverse actuellement, pour que la crise surgisse. Et ajoutons que, pour ce qui concerne la Belgique, la situation se complique du fait que sa production horticole est basée sur l'exportation, virtuellement impossible depuis la guerre.

L'hiver dernier, l'importation de produits étrangers en Angleterre a quelque peu souffert. La Hollande avait avantage à expédier ses légumes en Allemagne où on se les disputait à prix élevé. Vers l'Angleterre les envois étaient irréguliers et arrivaient souvent en mauvaise condition, ce qui, il est vrai, était dû souvent à ce que les envois ne se faisaient que dans les périodes de congestion qui allaient de pair avec une température très douce et des retards dans les marchés de distribution hollandais.

Les Cerises du Limbourg Hollandais (les Bastarddikke d'Eysden) ont également trouvé à se vendre en Allemagne. Il en est néanmoins arrivé des envois à Londres par la voie détournée de Rotterdam. Normalement les expéditions se font via la Belgique par le port d'Ostende et rejoignent en route les chargements de Moulund, de St. Trond, etc.

L'Espagne et le Midi de la France ont, à diverses reprises, essayé de faire leurs expéditions ordinaires, mais faute de main-d'œuvre, l'emballage était imparfait ou encore le matériel de chemin de fer faisait défaut et le trajet durait

trop longtemps. Les envois de fleurs dites de Nice, ont à peu près été nuls. Plus tard, les services se sont améliorés et récemment les Cerises, les Reines-claude arrivaient à peu près normalement. Actuellement, les Poires Bon Chrétien William sont amenées en bon état.

(A suivre.)

NOUVELLES DIVERSES.

LES FRUITS DANS LE PAYS DE HERVE.

La production de Poires et de Pommes sur le plateau de Herve, la région renommée des vergers pâturés au Nord-Ouest de Liège, est abondante. Dans les conditions actuelles, il est probable que tous les envois se feront vers l'Allemagne. On se rappelle que les droits d'entrée sur les fruits belges y ont été ramenés au tarif de faveur. Déjà précédemment, le pays de Herve fournissait des centaines de wagons de Poires et Pommes aux marchés des provinces du Rhin et de la Westphalie.

EXPOSITION HORTICOLE À VERVIERS.—Le *XIXe Siècle* annonce qu'une exposition horticole a récemment eu lieu à Verviers. Les recettes ont été affectées à l'Oeuvre des prisonniers de guerre.

LES LÉGUMES EN ALLEMAGNE.—Comme suite aux mesures déjà prises pour assurer l'approvisionnement en légumes, le gouvernement allemand est, annonce-t-on, décidé à opérer la saisie des légumes à cosse détenus en Allemagne et à fixer un prix maximum pour ces produits. En ce qui concerne les Pommes de terre, l'Association des Consommateurs d'Elberfeld-Barmen a demandé que le Reichstag prenne des mesures pour en diminuer les prix. Il s'agirait de créer une réserve de quinze millions de tonnes et de réglementer l'emploi des tubercules pour la fabrication d'alcool. Les consommateurs demandent aussi que la spéculation prenne fin. L'agence Reuter signale que la récolte des Pommes de terre pour 1915 est officiellement estimée à cinquante millions de tonnes. Quinze millions de tonnes seront nécessaires pour l'alimentation de la population, sept millions devront être réservées pour les plantations de 1916, cinq millions seront requises par l'industrie. Les vingt trois millions de tonnes qui restent pourront être employées pour l'alimentation des porcs.

LA RESTAURATION DE L'AGRICULTURE EN FRANCE.

—La commission agricole de l'Automobile-Club de France, estimant qu'il y avait un véritable intérêt national à provoquer la remise en culture des régions dévastées partout où cela est possible, a décidé de venir en aide aux agriculteurs ayant subi des dommages de guerre et de leur fournir le matériel agricole qui leur fait défaut. Un comité spécial, constitué pour mener à bien ce projet, comprend des délégués de l'Automobile Club, des grandes associations agricoles françaises et du Ministère de l'Agriculture. La Ministre a accepté la présidence du comité de patronage.

LA MAIN-D'OEUVRE AGRICOLE EN FRANCE.

—En vue d'assurer l'exécution des travaux agricoles, des compagnies de travailleurs ont été créées dans l'armée française. Ces compagnies renferment des hommes inaptes à faire la campagne ou des agriculteurs. La répartition initiale a eu lieu suivant les indications du Ministère de l'Agriculture, mais a été modifiée depuis selon les exigences des régions. Dans la zone de l'intérieur, les généraux commandant les régions ont de leur côté créé des compagnies au moyen d'hommes qui se trouvent dans les dépôts. Enfin, pour assurer les vendanges, des

permissions d'une durée de quinze jours pourront être accordées entre le 5 septembre et le 15 octobre aux viticulteurs mobilisés appartenant à certaines catégories. De plus, dans les départements où les vignobles ont une importance particulière, des équipes de travailleurs militaires seront mises à la disposition des communes pendant la même période. Ajoutons que les cultivateurs ayant besoin de personnel sont invités à s'adresser au service de placement de l'Office national de la main-d'œuvre agricole, 11, quai Malaquais, à Paris.

LES ENGRAIS CHIMIQUES EN HOLLANDE.

—Différents produits chimiques utilisés comme engrais sont considérés comme contrebande de guerre. Il en résulte que l'approvisionnement de l'agriculture est très difficile, voire même impossible dans certains pays. Pour y remédier, il a été constitué, en Hollande, une Commission dite des Engrais chimiques qui se charge de réunir les commandes des agriculteurs. En vue d'éviter l'exportation, chaque intéressé devra garantir les quantités d'engrais nécessaires à sa culture et, au préalable, déposer en banque une somme représentant la valeur des engrais. Cette somme serait confisquée au cas où, d'une façon ou de l'autre, le cultivateur n'aurait pas tenu son engagement d'éviter l'exportation des produits.

EXPOSITION HORTICOLE À LA HAYE.

—La Société néerlandaise d'Horticulture et de Botanique organise les 10, 11 et 12 septembre prochain une grande exposition horticole au Jardin zoologique de La Haye. Des prix importants y sont affectés et des mesures sont prises pour faciliter la vente des produits exposés.

OGNONS À FLEURS POUR LA RUSSIE.

—Les producteurs de bulbes de la Hollande sont parvenus à organiser un envoi de leurs produits vers la Russie. Malgré les entraves mises à la navigation dans la Baltique, ils ont affrété un bateau qui prendra une cargaison entière de bulbes à amener directement au port finnois de Raumo, d'où la distribution ultérieure en Russie sera aisée.

KORT OVERZICHT VOOR DE VLAMINGEN.

De Tuinbouw schijnt in't algemeen, natuurlijk met uitzondering van het zoo beproefde België, veel minder van den oorlog geleden te hebben dan verwacht was.

In Engeland is de handel in planten en bloemen wat verzwakt, maar voor fruit en groenten zijn de verhandelingen eerder voordan nadeelig geweest. Verschillige omstandigheden hebben voor gevolg gehad dat de aanvoer uit den vreemde een weinig verminderde; anderzijds is de vraag van wege de werkersklas druk gebleven en de prijzen voor de inheemsche kweekers zijn zeer loonend.

In het Land van Herve is de fruittoestel wel gelukt. Gewoonlijk trekt van daar reeds veel fruit naar Duitschland: nu zal men er alles moeten naartoe voeren wil men er van afgeraken.

In Frankrijk heeft men afdelingen soldaten ingericht die kunnen uitgezonden worden om de landbouwers in den veldarbeid bij te staan.

In Duitschland houdt men zich opnieuw bezig met de bevoorrading in aardappelen. De verbruikers vragen dat de regering de hand legge op de voortbrengst en de prijzen vaststelt.

Sommige kunstmestmen kunnen dienen tot het vervaardigen van springstoffen. Wil men er in Holland voor den landbouw bekomen, dan moet men op voorhand het geld storten als waarborg voor het werkelijk gebruik als meststof.

CHLOROPHYTUM BOWKERI.

This fine Liliaceous plant was described by Mr. J. G. Baker in the fifth volume of Wilson Saunders's *Refugium Botanicum*; but the plant from which the description and the drawing were made must have been in poor condition—very likely a pot-grown specimen—for the stem is given as only a foot high and the raceme as simple and one foot long. In favourable seasons my plant, growing in an open border in front of a Peach house, throws up stems over 3 feet high, bearing branching racemes (as shown in fig. 46), which add considerably more than 2 feet to the height of the plant when in flower.

Though the flowers are not very large they are of such a pure, solid white that their effect is very pleasing, and, blooming in September and remaining in flower for several weeks, the plant is a worthy subject to grow in a sheltered corner. It needs some slight protection, such as a hand-light or some ashes, over the crown during the winter, but when one remembers that it is a native of the north-eastern district of Cape Colony these precautions do not appear too great a tribute to pay to such a handsome southerner. The top growth dies down very thoroughly after the first sharp frosts, and starts again rather late in spring. In some seasons I have felt anxious when no sign of the plant's reappearance was visible in mid-May. Once through the ground it grows quickly and the broad leaves are handsome long before the flower-spikes appear. I owe my plant to the generosity of Mr. Irwin Lynch, who gave me a division from the fine specimen that does so well in one of the bays in front of the range of houses in the Cambridge Botanic Garden. I think Mr. Ledger has a plant in his garden at Wimbledon, but beyond these two examples I do not remember seeing it elsewhere, though it is likely to succeed in the open in any sheltered border where *Crinum Monrei* can be grown. The plate in the *Refugium Botanicum* gives but little idea of the plant's stately beauty when in flower. E. A. Bowles.

WISLEY NOTES.

INSPECTION of the entries in the Visitors' Book shows that the number of Fellows visiting the gardens is as great as ever. Nor is this to be wondered at, for where else so near London may be found a spot so calculated to beget a little forgetfulness from the worries and anxieties of the war?

One of the most pleasing of the recent additions is the rock-work arranged about the "blue" Lily pond. The somewhat unsightly rectangle of cement is now hidden, the Lilies are in full flower, and show up delightfully against the background of Bamboos.

A visit to the edge of the wild garden shows the site which is being prepared for the hardy Fern collection, which collection is, we are informed, to be presented by Mr. Crossfield. The *Phloxes* under trial this year have made, and are yet making, a brave show, and alone are worth a journey to the gardens. They are growing between the lines of Apple trees in or near the old kitchen garden, and have evidently profited by the rich soil no less than by the heavy rains of a few weeks ago. No less brilliant are the *Pentstemons*, which have been grown on from last year's trial.

The season has been all against the new Red and other Sunflowers which are being tried. Some of the plants had a week ago attained to gigantic proportions, but to a casual inspection very few appear to be fixed.

A beginning has been made in the large field beyond the wild garden toward the establishment of nursery quarters in which the recently introduced Chinese shrubs, etc. are to be tried. Judging from the poor growth of the trees in

the field, the spot might not seem to have been well chosen, but, nevertheless, the subjects already in the nursery are doing remarkably well, and demonstrate that by well trenching it an unkindly soil may be converted into a kindly one. It is, we believe, the intention to plant out in the large field and from the nursery quarters those recently introduced plants which show signs of being of garden value. If that scheme can be carried out, and a sort of *jardin d'acclimatation* established, a very useful addition to Wisley will have been made. Last year one of the most memorable features in the garden was the blaze of colour on a mound in the rock-garden of *Mesembryanthemum tricolor*. This year the season has been unpropitious, and the plants have done but poorly. Far removed from



FIG. 46.—CHLOROPHYTUM BOWKERI: FLOWERS WHITE.

the rest of the garden is a quarter termed the plant hospital, which contains the plants under investigation by the Society's entomologist and mycologist. This quarter is worth a visit, not only for the sake of the interest of the various experiments in progress there, but also because on the way thereto a close view is obtained of the group of cottages which the Society has built for its workmen. The cottages are admirable in every respect. Some are already occupied, and when the scheme of laying out the quadrangle is completed they should provide ideal homes for gardeners. Each cottage has attached to it about a quarter or more of an acre of ground. The Society is to be congratulated on its enterprise, and although, as we understand, the venture is not one which will bring

more than the barest of returns—if any—to the Society, nevertheless, Fellows will recognise that in making this long-needed provision for the housing of its staff of workmen the Society has exercised wisdom and patriotism.

INDIA.

OUR INDIAN GARDEN.

IN the very south of India it is always summer. When the temperature at Christmas is over 80° it can be imagined what the heat of midsummer is like, and it is curious to see how some plants and trees prefer the cooler and some the hotter weather; for instance, the tall Cork trees standing so near the house that their clouds of pure white flowers, that fall like snow all day, scent the whole air in January; the Cashu-nut tree opposite our porch is covered with millions of insignificant-looking but sweet scented flowers in March, which turn to crimson Pear-like fruit at the end of April; in May the Margosa or Neem tree breaks into tiny white flower, and later still the Puaracu or "Portia" (the tree-Tulip) shows its yellow and its pink flowers. Near the verandah grows a tree of the Mimosa family, whose fluffy little flowers turn, in March, into long twisted pods like corkscrews, which are so good to eat that not only do the crows and other birds perform acrobatic feats on the branches to obtain them, but small boys with knives attached to long poles come to drag them down. Just beside the gateway is a curious member of the Banyan tribe—"icha maram," the natives call it—that in June has thousands of little green Figs all along its branches (branches that, by the by, will grow profusely if just stuck in the ground). Here on hot June mornings can be seen many of the shy copper-smith birds, so often heard in the hot weather making their monotonous "tonk," "tonk," but so seldom seen, showing their green backs and crimson cheeks fearlessly to get the luscious fruit. From the gateway and lining all the paths are Henna hedges, some six feet high; the women gather the new leaves to stain their fingernails, and the gardener has to be continually clipping the long shoots to keep the edges trim. If the shoots are allowed to grow and flower the scent is unspeakably sweet, and it is worth keeping a few patches for this alone. The great Cashu-nut tree (Promotion nuts they are called when eaten for dessert, owing, I believe, to indigestible qualities!), with its great sprawling branches, breaks through the hedge in places, and can be almost converted into a summer-house of broad leaves, using the branches that sweep the ground as seats. Amongst the fallen leaves lurk the bright seven-coloured Pittas, birds that easily fall a prey to the blowpipe of Mohammedan boys, who sell them alive for food. Behind this tree a tall Acacia grows, bearing fruit exactly like a Gooseberry; many of its small branches were cut off and built into the foundations of a new well we had made, because they said it would make the water sweet! Then come some Coco-nut Palms, one a dead stump, in the holes of which mynas and parrots dispute vociferously about their nests. On the roadside, hard by, Custard Apples grow on small trees some twelve feet high, and close by the dark thick foliage of some Mango trees overshadow everything else. If you have once tasted the grafted Mango you will agree that it is worthy of its name of the "king of fruit." At the end of the compound, under the shade of Neem and Tamarind tree, is the stable, a red-tiled gabled building, divided by a wall down the middle; on one side, opening on the road, are three servants' go-downs or living rooms; on the compound side, three open stalls some ten feet wide, easily convertible into stable, coach-house, or motor shed. Time and patience are required to produce flowers in these southern coast towns, but the Oleander flourishes, and the exile Oleander, with yellow trumpet flowers.

Zinnias and Cannas flower profusely, and Petunias, Hollyhocks, and Tuberoses can be persuaded to show their beauty tardily. Japanese Sunflowers, Marigolds, and Cosmos are much more readily induced to flower, and there is a pink and a snow-white Periwinkle that flowers anywhere and everywhere, and cannot be suppressed; the great weed of India.

No, garden flowers are not a strong point of the plains of India; it is in flowering shrubs and creepers that both scent and beauty are to be looked for. The Rangoon Creeper has clusters of sweet-scented pink and white flowers, and the Antigonum, the white variety as well as the usual pink one, cover one's porch profusely, and climb nearly to the top of the bungalow. A most delicate little Creeper (*Quamoclit vulgaris*) shoots up in May and June, and throws out deep crimson trumpet flowers, and a brilliant cool weather Creeper is the Morning Glory, or blue *Convolvulus*, whose lovely colour gives one an æsthetic tonic before leaving for the office.

Many people have not sufficient perseverance to grow flowers, and so devote themselves to *Caladiums* and *Codiaeums* (*Crotons*) to ornament the vicinity of their homes. A very large variety of *Codiaeum* has crimson and green to yellow and green foliage.

I have written elsewhere about our birds, but no account of the garden would be complete without them. The Indian crow is always with us, and would be a public nuisance were it not for the comedy that he manages to mix up with his impudence. Pied wagtails build in the leaf roof of our verandahs, and cheer us with their sweet song. Scores of bulbuls come into the Cork trees and listen to the canary, adding little bars to their repertoire. Tiny yellow-breasted coras move about like mice among the branches. Anon the great blue-backed kingfisher comes and twitters miserably above the well, as if he was grumbling at the monotony of a frog and fish menu, or a crimson-crested woodpecker dashes excitedly on to a tree and hammers furiously upon the bark. The birds are innumerable, and as to the reptiles and insects, they form a subject that is too large to enter upon here. We live in a wealth of greenery—great ferns in pots too heavy to move upon the verandah, around us nothing but green trees, and, from the very top of the bungalow roof, nothing but green as far as the eye can see, but here and there glimpses of the blue sea. Truly, Southern India is a brilliantly green country. *H. Worsdell.*

ESPALIER APPLES.

I RECENTLY inspected an extensive plantation of Apple trees trained as espaliers. The wire-work to which the trees are trained is 5 feet 6 inches high, and there are five wires 1 foot apart. The trees, which are probably some four years old, consist at present of two pairs of horizontally-trained branches and a leader, and are planted at a distance of 14 feet apart.

The question arises as to what is the most suitable treatment for these trees, looking at it, as it is, as a commercial proposition. As there seems to be no book in the English language to throw any light on the subject, it became necessary to consult either French or German authors.*

Why do we call trees espaliers? The French word espalier is always the framework, or trellising, upon which trees are grown; and only refers to a framework against a wall; that in the open is a contre-espalier. As trees cannot be espaliers we must give them the right name for that form, which is horizontal palmettes (*palmettes à branches horizontales*).

Vercier, the French authority consulted, gives a description and the methods of growing such

trees, but does not seem to care for them except for Apricots.†

Pekrun, the German, condemns them thoroughly.‡ He gives the following two objections—that there is nothing to be done when the branches of two adjoining trees meet; grafting them together would only make things worse, the sap would have nowhere to go and would be thrown back into the fruit spurs, which would soon become a mass of growth without bloom. Secondly, that the main stem grows in girth uncommonly quickly at the expense of the branches. This can be seen in almost any garden, for example a Pear tree some twenty years old, which measures 16 inches in circumference above its second branches, the said branches only measuring 4 inches. This tree never bears anything like the crops which it should.

If, then, it is decided that the horizontal palmette is not a profitable form for these trees, what other form is there in which they can be trained without sacrificing the two pair of branches which already exist? They can be easily converted into Verrier palmettes, which have none of the disadvantages enumerated above. In this form branches are trained horizontally in pairs to their appointed distance, and are then bent up to the vertical and trained on laths or bamboos to the top of the espalier.

Pekrun and Vercier both give 1 foot (30cm.) as the distance apart for these vertical branches.§ Lorette, however, considers that this is too close, and does not allow of enough light and air to get to the fruit spurs, and recommends 16 inches (40cm.).|| If in the former case we take a space of 15 inches between the upright laths there will be twelve of these in the 14 feet, which is the distance at which the trees are planted. Then if we train the existing trees into eight-armed Verrier palmettes, that is with four pairs of branches, we shall have the four centre laths unoccupied, and on these latter we can train a new tree with four vertical branches, either as a Verrier palmette or as a double U.

In training all forms of fruit trees it is most important that the lower branches should be well built before any start is made in forming the upper part of the tree. The leader, therefore, must be cut back more than one year if necessary until the lower pair of branches is well established; then we may proceed to form the next pair. During the first year they should be allowed to grow obliquely, being gradually brought down during the growing period until they reach their proper horizontal position. They will want carefully watching to see that they make equal growth, and that one does not get an undue share of sap. A general rule is that the more upright a branch is the stronger it will grow. Therefore the stronger branch of the pair should be tied down to a lower angle; pinching out the tip, too, will check it a great deal. This naturally leads to the question as to what is to be done if, in spite of, or for want of, these precautions, one of a pair of branches is stronger than its fellow?

Now it is an accepted fact that hard pruning produces strong growth. The roots and branches of a tree correspond, therefore by cutting off some of the branches we upset the equilibrium, and there is more sap elaborated by the roots than what is left of the branches require, hence the stronger growth. But it would be quite wrong to argue from this that we must cut the weaker branch back hard in order to induce it to grow as strong as the other, as this would have exactly the opposite effect. This is out very clearly by Pekrun. He says: "We have to find out by experience what effect it has on the rest of the tree when

we cut off part of a branch. The effect is always the same. Firstly, the branch is a bit shorter; then there is a stagnation of sap, which is thrown back into the rest of the tree. The longer the piece that is cut off the stronger is this stanking of the sap, and if, for example, in the case of a branch with many side branches, all these are cut off hard back, the dammed back sap is naturally forced into the main branch; if one of these side shoots is cut back, or the flow of the sap stopped in any way, the superfluous sap flows into the other side shoots on either side, but mostly into the strongest or the one pointed more directly upwards and outwards; whilst the shoot that is cut off is stopped in its growth until, by the breaking out of an eye, it has built itself a new outlet for the flow of sap, which again flows into it as before. This suspension of growth lasts about four weeks in the summer."

This explains very clearly why, to restore equilibrium in the tree, it is the stronger, not the weaker, branch that must be cut back hard.

These are what seem to be the solutions of some of the questions which have actually arisen in the formation of a plantation of trained trees. Whether it is wise to grow these trees for the production of fruit for market is another question, but it must be remembered that such trees grow the finest fruit, and that whilst ordinary orchard Apples are often difficult to dispose of at a remunerative price, there is always a demand for first quality fruit at remunerative prices. *R. H. Cazalet, B.A.*

CULTURAL NOTE.

FREESIA CHAPMANII.

Those who experience a difficulty in growing the beautiful hybrid *Freesias* known as *F. Chapmanii* will find of use the following directions for the treatment of the bulbs, sent us by a successful cultivator of these flowers. "Pot the bulbs from the middle to the end of August in compost consisting of good turfy loam mixed with dried cow manure. Add a little bone meal or powder, some old mortar, and intermix it with the loam. If bone meal only is added, use sufficient silver sand to render the compost porous, but with mortar rubble the sand may be dispensed with. Place 6 to 9 bulbs in a 6-inch pot, first making firm the compost on which they are arranged, and also press the soil about them firmly. Plunge the pots in a cold frame up to the rims in a bed of ashes, and cover them to the depth of about 1 inch with leaf-mould or fine peat dust. If the compost is moist when used watering will not be necessary, and very little moisture will be required subsequently until the shoots start into growth. The plants should then be lifted from the bed, and the covering layer shaken off. They should then be replaced in the frame and carefully protected from frost, or removed to a cool greenhouse close to the roof-glass. Success in forcing largely depends on potting the bulbs sufficiently early to develop a good root system. It is useless to attempt forcing bulbs potted late: if they are required to flower before the middle of February they should be planted not later than August. Let the roots have ample supplies of moisture, with occasional doses of weak liquid manure, after the flower-scapes have made their appearance."

Mr. F. Herbert Chapman, raiser of the hybrid, informs us that he grows it with other *Freesias*, and the growth is practically uniform with them. He writes: "A friend once told me that he had on an occasion known bulbs of it to take a whole season's rest, and this is at times the behaviour of other *Freesias* and of certain other bulbs, but *F. Chapmanii* has never behaved so with me to my knowledge."

* *Arboriculture fruitière*. J. Vercier. (Hachette et Cie.)

† *Anfänger Fragen in Obstbau*.

‡ *Rationaler Schnitt aller Obstbaumformen*. Von Arthur Pekrun. (Verlag des Erfurter Pflanzers, Erfurt.)

§ *La Taille Lorette*. Par L. Lorette. (Bibliothèque du Journal *Jardinage*, 90 bis, Avenue de Paris, Versailles.)

* Except Du Breuil's book of *Fruit Trees*, which was first translated in 1871.

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

AUGUST 17.—*Present*: Mr. E. A. Bowles, M.A. (in the chair), Messrs. J. Ramsbottom, J. T. Bennett-Poë, H. J. Elwes, C. E. Shea, J. Allard and F. J. Chittenden (hon sec.).

Outgrowth on Saxifrage leaf.—Mr. W. H. B. Fletcher, of Aldwich Manor, Bognor, sent leaves of *Saxifraga lingulata* var. *ciliata* with curious small, leaf-like outgrowths at the junction of petiole and leaf-blade.

Podophyllum Emodi.—Mr. Elwes showed a fruit of the plant exhibited by Mr. Allgrove, of Langley, as the large form of *Podophyllum Emodi*, to draw attention to the groove running along the side, which he had not seen in other specimens. The foliage also showed some considerable variation in lobing and size from the normal form of *P. Emodi*.

Rhododendron foliage damaged.—Mr. Ramsbottom showed specimens of *Rhododendrons* from Bournemouth, to call attention to the great amount of damage done to foliage by two species of fungi which appear to be very prevalent in that district.

Parsley leaf malformed.—Mr. E. M. Holmes sent a curious leaf of the common Parsley from his garden, in which some of the pinnae were strap-shaped and entire.

Urginea maritima.—A finely-flowered specimen of what was apparently a white form of *Urginea maritima*, flowering from a bulb collected near Biskra, in N. Africa, was exhibited by Lady Leon, of Bletchley.

TRIAL OF EARLY PEAS.

The Council has approved the following recommendations of the Fruit and Vegetable Committee for Awards to Early Peas tried this season at the Society's Gardens at Wisley:—

AWARDS OF MERIT.

A.1 (SUTTON AND SONS), First of the Season (COOPER, TABER AND CO.), World's Record (SUTTON AND SONS), and Giant Express (J. CARTER AND CO.).

HIGHLY COMMENDED.

American Wonder (SUTTON AND SONS), Dobbie's Express (DOBBIE AND CO.), The Pilot, "Hawthorn Selection" (ALEX. DICKSON AND SONS), Kelvedon Wonder (HURST AND SON), Chantecler (HURST AND SON), Model (HURST AND SON), May Queen (SUTTON AND SONS), Early Queen (BARR AND SONS), Bountiful (SUTTON AND SONS), British Lion (ALEX. DICKSON AND SONS), Sixty Days (J. CARTER AND CO.).

TRIALS OF PHLOXES.

The Council has approved the following recommendations of the Floral Committee for Awards to herbaceous Phloxes tried this season at the Society's Gardens at Wisley.

AWARDS OF MERIT.

Antonin Mercie (W. WELLS AND CO., BARR AND SONS, J. BOX, AND H. J. JONES, LTD.), Aubrey Alder (W. WELLS AND CO.), Espérance (W. WELLS AND CO.), Europe (PEITZER, J. BOX, RUYS, AND H. J. JONES, LTD.), Lady Grisel (BARR AND SONS), La Neige (JOHN FORBES, LTD., AND J. BOX), Meleore (BARR AND SONS, J. BOX, AND H. J. JONES, LTD.), Selma (W. WELLS AND CO., BARR AND SONS, J. BOX, RUYS AND H. J. JONES, LTD.).

HIGHLY COMMENDED.

Aegir (H. J. JONES, LTD.), Arthur Ranc (W. WELLS AND CO., J. BOX, JOHN FORBES, LTD., AND H. J. JONES, LTD.), Aurora (J. BOX, JOHN FORBES, LTD., AND H. J. JONES, LTD.), Baron von Dedem (W. WELLS AND CO., J. BOX, RUYS, JOHN FORBES, LTD., AND H. J. JONES, LTD.), Braga (J. BOX AND H. J. JONES, LTD.), Derviche (W. WELLS AND CO. AND BARR AND SONS), Distinction (W. WELLS AND CO. AND H. J. JONES, LTD.), Dr. Königsbofer (PEITZER, J. BOX, RUYS AND H. J. JONES, LTD.), Fort de France (W. WELLS AND CO., BARR AND SONS, AND J. BOX), Frau Grimm (PEITZER), General van Heutsz (W. WELLS AND CO., BARR AND SONS, J. BOX, RUYS,

JOHN FORBES, LTD., AND H. J. JONES, LTD.), Goliath (BARR AND SONS, J. BOX, RUYS AND H. J. JONES, LTD.), Helmuith Hirth (PEITZER), J. E. Suckling (W. WELLS AND CO.), Jules Sandeau (J. BOX AND RUYS), Lady Satanella (W. WELLS AND CO. AND BARR AND SONS), Lady Tate (JOHN FORBES, LTD.), Mrs. E. H. Jenkins (J. BOX AND JOHN FORBES, LTD.), Pharaon (BARR AND SONS AND J. BOX), Rose Queen (W. WELLS AND CO. AND H. J. JONES, LTD.), Seduction (JOHN FORBES, LTD.), Sergeant Lovy (BARR AND SONS AND JOHN FORBES, LTD.), Sheriff Ivory (W. WELLS AND J. BOX), Viktor Stoessel (PEITZER), Widar (J. BOX AND H. J. JONES, LTD.).

COMMENDED.

Champignol (BARR AND SONS), Daniel Leseur (W. WELLS AND CO., J. BOX AND JOHN FORBES, LTD.), Flora Hornung (W. WELLS AND CO., J. BOX AND JOHN FORBES, LTD.), Josephine Gerbaux (J. BOX AND H. J. JONES, LTD.), L'Aiglon (BARR AND SONS AND H. J. JONES, LTD.), Marvel (JOHN FORBES, LTD.), Oculata (H. J. JONES, LTD.), Reichgraf von Hochberg (BARR AND SONS, J. BOX, RUYS AND JOHN FORBES, LTD.), William Scott (JOHN FORBES, LTD.).

ENQUIRY.

Can any reader of the *Gardeners' Chronicle* inform me of the market value of vegetable ivory? H. M.



THE LATE LOUIS FORCET.

Obituary.

LOUIS FORCET.—We regret to announce the death of Monsieur Louis Forcet, the distinguished French plant collector and explorer, who, for the past twenty-three years, has been engaged by Messrs. Sander and Sons, St. Albans, in plant collecting in Central and South America. He died in hospital at Rennes, on the 10th inst., from heart affection, his demise being unexpected, for during the whole of his arduous life he has rarely suffered from illness. Since his first journey to Brazil, in 1891, Mr. Forcet was engaged in collecting Orchids and other plants, exploring Central and South America for the purpose, returning to Europe at rare intervals for a few months, his stay being often cut short by his desire to return to the wilds, where he was much more at home, he said, than in Europe. He was absolutely fearless in the dense forests of South America, but disliked the noise and bustle of large towns. He had a happy way of ingratiating himself with the natives wherever he went, and never carried firearms for protection, even when on journeys taking him long distances from the haunts of man. His first journey was to the region about Pernambuco, to collect the re-discovered *Cattleya labiata autumnalis*, and

he succeeded so well that soon gardens were abundantly supplied with this beautiful species. In the early 'nineties he also collected a large number of *Laelio-Cattleya* elegans, which had up to that time been very scarce; he sent home a pure white variety, which seems to have been lost. He followed no beaten track, and worked on no known data, but went wherever good or new plants might be expected, from Uruguay to Mexico, often making his own road from one locality to another. He re-discovered *Laelia Jongheana*, and the true *Laelia Gouldiana*. Twice he went to Peru, chiefly for *Cattleya Rex*. The first consignment was lost, for the ship by which it was sent was wrecked; but the next batch arrived fairly well. M. Forcet saw the plant flowering profusely with pseudo-bulbs as large as those of *Laelia purpurata*, but under cultivation it appears to be a rather difficult subject. His favourite journeys were to the Eastern slopes of the Andes, crossing wherever he could in Peru and Bolivia. He discovered and sent home a number of handsome new plants, which will perpetuate his name, one of the most interesting and valuable being *Nicotiana Forgetiana*, which, crossed with *N. affinis*, has given us the beautiful forms of *N. Sanderæ*. Another plant bearing his name, *Brassia Forgetiana*, was shown at the last meeting of the Royal Horticultural Society. Louis Forcet had the reputation of being an unassuming, straightforward man. His remains are buried in the Cemetery of Rennes.

A. J. P. BRUCE.—Horticulturists will learn with regret of the death of Mr. A. J. P. Bruce, nurseryman, of Chorlton-cum-Hardy, Manchester. Mr. Bruce died on the 21st inst., in his seventy-second year. He specialised in the cultivation of insectivorous plants, and his exhibits of these plants at the Temple Flower Shows were invariably interesting and well arranged.

MATTHEW CAMPBELL.—We regret to announce the death, on August 20, of Mr. Matthew Campbell, head of the firm of Messrs. Campbell and Son, nurserymen, Auchinraith Nurseries, Blantyre. Mr. Campbell, who was about eighty years of age, was upwards of forty years ago gardener at Mauldslee Castle, but he relinquished his post to engage in the nursery business at Blantyre, specialising in florists' flowers, and was particularly successful with Dahlias, Chrysanthemums, Pansies, Violas, and Carnations.

THE WEATHER.

WEATHER IN WEST HERTS.

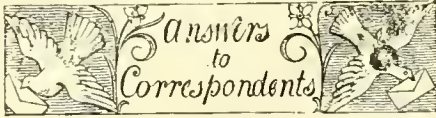
Week ending August 25.
Warm, Dry and Calm.—This was on the whole a warm week. There was only one unseasonably cold day, but three cold nights, and on one of these the exposed thermometer fell to within 9° of the freezing point. The ground is at the present time at a seasonable temperature both at 1 foot and 2 feet deep. No rain has now fallen for eight days, this being the first week we have had without rain for two months. During the week only a few drops of rainwater has come through the bare soil percolation gauge, and those on the first day, while none has come through the gauge on which short grass is growing, for three weeks. The sun shone on an average for six hours a day, which is ten minutes a day longer than is usual in August. Calms and light airs alone prevailed during the week. On the three calmest days the total velocity reached, respectively, seven, eight, and ten miles, making these, with two exceptions, the calmest days during the twenty-nine years over which my records at Berkhamstead extend. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by 5 per cent. E. M.

GARDENING APPOINTMENTS.

Mr. H. Pennells, for the past twelve months Gardener to J. R. Edmondson, Esq., Fricley House, Cranbrook, Kent, as Gardener to C. G. Norbury, Esq., Buckland House, Wadhurst, Sussex.

CATALOGUES RECEIVED.

ALEX. DICKSON AND SON, LTD., Belfast and Dublin.—Bulbs.
D. C. PRODE, Glasgow.—Bulbs.
DICKSONS, Chester.—Bulbs.
JAMES CARTER AND CO., Raynes Park, London.—Bulbs.
R. H. BATH, LTD., Wisbech.—Bulbs, Roses, Paeonies, Hardy Plants, Fruit Trees.
JOHN McKEERCHAR, 35, Giesbach Road, Upper Holloway.—Bulbs and Flower Roots.
DOBBIE AND CO., Edinburgh.—Bulbs, Sweet Peas, Carnations, Pansies, Roses.



BORDER CHRYSANTHEMUMS: *J. K. B., Holland.* If by Border Chrysanthemums you refer to those of the early-flowering section, you will find the paper read by Mr. C. Harman Payne at the Chrysanthemum Conference, held under the auspices of the National Chrysanthemum Society on October 4, 1905, suitable for your purpose. The paper was published by the society in pamphlet form, price 6d. The secretary is Mr. R. A. Witty, 72, Saver-nake Road, Gospel Oak, London.

CHEIRANTHUS ALLIONII FAILING: *J. P., Hampton Court.* The plants have been injured by the mining maggot of a fly. In future you should sprinkle the surface of the soil, while the plants are still quite young, with guano. This will deter the flies from depositing their eggs on the stems.

COLOURED BEAN: *A. G. J.* The purple-podded Bean; the variety was shown well in the Hon. Vicary Gibbs' collection of vegetables at the R.H.S. meeting on the 17th inst.

DWARF ROSES: *Stedman.* Allow the long shoots to remain until pruning time next spring, when they should be shortened to about 1 foot. The weaker growths will need pruning more severely.

GOOSEBERRIES DISEASED: *C. S.* You are correct in your assumption that the plants and fruits are affected with American Gooseberry mildew. See coloured plate and description with remedial measures in the issue for December 7, 1912.

GRAPES IN UNHEATED HOUSES: *Sir A. B. H.* Black Hamburg Grapes may be grown in unheated vineries, but it is doubtful if Muscat of Alexandria would succeed unless in very favoured districts. Provided the wood is thoroughly ripened by the autumn, both varieties, however, may be safely wintered without the using of artificial heat. But it would not be advisable to allow the thermometer inside to register more than 8° to 10° of frost, for then there would be great danger of water in the pipes freezing and cracking them. The fact that the vines have been subject to frost during the winter would naturally retard growth in the spring, so much so that, with careful management, fire-heat would not be necessary much before the end of March, by which time the vines will have started into growth naturally.

GRUBS IN SOIL: *J. H.* The insects are the larvae of one of the Aculeate Hymenoptera. They are too damaged to name or rear.

LIMES AS ORNAMENTAL TALL TREES: *J. B. H.* The best Lime to plant as ornamental specimens is *Tilia euchlora*, also known as *T. dasystyla*, and *T. petiolaris*. When fully grown *T. argentea*, or correctly *T. tomentosa*, is also a very handsome tree, but when young it has a somewhat stiff and formal appearance. This Lime is quite hardy and produces very ornamental leaves, but for general planting it is less useful than the two previously mentioned. *T. spectabilis* is conspicuous by reason of its large foliage; it, however, hardly blooms so freely as some of the others. *T. platyphyllos*, *T. cordata*, and *T. vulgaris* all blossom freely and early, but the leaves often become unsightly and commence to fall in August.

MELON LEAVES AFFECTED: *Anxious.* Your Melon plants are attacked by an organic disease, and should be sprayed twice a week with a solution of liver of sulphur. The proportion is one ounce in five gallons of water. It should be noted that this solution has a deleterious effect on white paint, which it turns black, so that care should be exercised in its application.

NAMES OF FRUITS: *W. T. and Co.* Apple Beauty of Bath.—*Anxious.* 1, Devonshire Quarrenden; 2, Red Astrachan.

NAMES OF PLANTS: *D. M.* *Juglans regia* var. *lacinata*.—*W. Houlden.* *Taxodium distichum*.—*A. Neunham.* *Coronilla Emerus*.—*H. E. C.* *Lysimachia barystachys*.—*J. M.* 1, *Polygonum aviculare*; 2, *Medicago sativa*; 3, *Sonchus asper*; 4, *Lactuca muralis*; 5, *Potentilla arguta*; 6, *Lotus corniculatus*; 7, *Prunella vulgaris*; 8, *Lapsana communis*.—*A. T.* 1, *Melilotus arvensis*; 2, *Centranthus ruber*; 3, *Reseda alba*.—*P. B. B.* 1, Rose (not recognised); 2 and 4, forms of *Statice latifolia*; 3, *S. limonium* var.; 5, *S. tartarica*; 6, *Echinops Ritro*; 7, *Eryngium amethystinum*; 8, *Yucca filamentosa*; 9, *Ligustrum coriaceum*.—*W. J. G.* 1, *Hemerocallis Kwanse variegata*, a Japanese form of *Hemerocallis fulva*; 2, *Anthericum elatum variegatum*; *G. E. G.* *Kalmia latifolia* (Calico Bush).—*A. B. H.* *Desmodium cinerascens*.—*J. O.* 1, *Helxine Solierolii*; 2, *Rhamnus Frangula* (Berry-bearing Alder).—*L. C., Hants.* 1, *Aralia chinensis*; 2, too withered to identify; 3, *Inula glandulosa*; 4, *Alyssum argenteum*; 5, *Cytisus nigricans*; 6, *Spiraea japonica*; 7, *Astilbe Davidii*; 8, *Spiraea palmata* var. *alba*.—*R.* 1, *Nandina domestica*; 2, *Astilbe Davidii*; 4, *Lysimachia barystachys*; 5, *Cimicifuga cordifolia*; 6, *Ophiopogon Jahurum variegatus*; 7, *Saponaria officinalis* (double form); 9, *Lycium chinense*; 3 and 8, specimens insufficient for identification. —*C. Fulton.* *Malva* sp., probably *M. parviflora*.—*G. D. A.* 1, *Veronica gentianoides*; 2, *Sedum* sp. (send flowers); 3, *Veronica Chamaedrys*; 4 and 5, cannot be identified; 6, *Linaria dalmatica*. Although it is essential that specimens should be packed moist, yours were so wet as to be half decayed.—*W. H. B.* *Rubus phoenicolasius*, Japanese Wine Berry.

OAK TREE STRUCK BY LIGHTNING: *A. H. M.* The death or partial death of a tree after being struck by lightning depends largely upon the severity of the shock. In some instances, though the actual course of the lightning may not be well marked, considerable injury may have been caused to the cambium, whilst in other cases the bark may have been loosened over a considerable area, although not actually removed. In other cases the shock may have been confined to one side of the tree, the opposite side being intact and able to carry out its proper functions. One authority, F. Cohn, suggests that when lightning strikes a tree the wet cambium-zone conducts the electrical discharge, and the contained water is suddenly converted into vapour, the expansion thus caused stripping off the bark in various places. This would naturally destroy the cambium layer connecting the wood and bark. The reason why one side of a tree should be killed and not the other is a more difficult matter to explain.

PEAS FAILING: *F. R., Harrow,* and *A. B., Mickleover.* The Peas are attacked by a disease known as *Thielavia basicola*. Whether there is still time to save the crop depends on the extent of the disease, but we fear it is very doubtful. Try watering the plants twice a week with a solution of sulphate of potash.

PLUMS INJURED: *R. J.* The damage has been caused by the Plum fruit moth, *Opadina funebrana*. The only treatment is to tie sacking around the base of the tree 1 to 2 feet from the ground, double folded, so that one piece is tied tight to the tree and the other outer one left loose. This should be done now, as the larvae are maturing. Take off the hands and burn them in winter with the hibernating larvae.

POINSETTIA: *Twyford.* The shoots of *Poinsettia* (*Euphorbia pulcherrima*) should not be stopped in September, as the bracts are formed on the growths of the current summer. It is rather late in the season to pot the plants. Allow two or three shoots to remain on each plant, and feed the roots twice a week with weak liquid manure. Syringe the plants on frequent occasions, and grow them in a tem-

perature of 60° to 75° with plenty of moisture in the atmosphere.

POTATO TUBERS EATEN: *R. B., Ipswich.* The Potatoes have been eaten by an insect known as *Julus pulchellus*. Mix some guano with the soil in which the Potatoes are growing, which will have the effect of driving the pests away.

RHODODENDRON LEAVES DAMAGED: *Constant Reader.* Your Rhododendron leaves have been eaten by the Bean Weevil, which occasionally attacks Rhododendrons. It is a difficult matter to destroy the pest; the use of Vaporite in the soil around the plants and constant stirring of the surface of the ground, especially in the drier spots, is recommended. The browning of the edges of the leaves is due to climatic causes, probably a burst of strong sunshine after rain.

RHUBARB: *G. E. R.* The variety is The Sutton.

SALVIA SPLENDENS: *R. Evans.* Bedding Salvias are among the easiest of soft-wooded plants to propagate, and the cuttings may be inserted now. Place about ten cuttings in a 48 sized pot filled with light, sandy compost. The cuttings will form roots readily in a cool propagating frame or pit if kept close, damped daily, and shaded from strong sunshine. Salvias may also be propagated from cuttings rooted in a warm house during the spring. Spring-rooted plants make good specimens for bedding the same year.

SHALLOTS DISEASED: *D. M.* The Shallots are attacked by a fungus known as *Sclerotinia*, and nothing now can save them. They should at once be rooted up and burnt, leaving no trace either in the ground or anywhere else, and the ground immediately afterwards treated with quicklime.

STORING APPLES AND TURNIPS: *Anxious.* The method you have adopted in storing Apples is the opposite to what you should practise, for a dry, airy box-room is the worst possible place in which to store fruits. Place the Apples when thoroughly matured in a practically airtight room or cellar, and keep the floor damp. The trays you employ are suitable. Turnips are among the worst roots for storing, and should not be placed together in large numbers. The roots may be pitted much in the same way as Potatoes, but between each layer straw should be placed, and the top of the pit well ventilated. Turnips are best left in the ground, for if the bulbs are well covered with soil frosts will not injure them.

SYRINGING PEACH TREES: *A Constant Reader.* The soft soap and paraffin specific may be used to destroy red-spider on Peach trees if you proceed as follows:—Dissolve $\frac{1}{4}$ lb. of soft soap in one gallon of boiling water, and add one wineglassful of paraffin. Keep the mixture well stirred by returning every alternate syringe-full to the vessel containing the liquid, and do not syringe when the sun is shining on the house. Late in the afternoon is the best time for the operation, and the trees must be rinsed with clear water with the syringe before the sun reaches the trees the following morning.

TOMATOS UNHEALTHY: *W. C. S., Breakspear.* Owing to the slow progress of anything sent by rail at the present time your parcel of Tomatos has only just arrived. We have submitted them to our expert and he reports that there is no organic disease discernible. In the cases of Nos. 1 and 2 the trouble is due to overfeeding, i.e., the too free use of stimulants. If you correct this the unhealthy condition of the plants will by degrees disappear. No. 3 has suffered from lack of potash in the soil. In ordinary circumstances an application of potash salts would be the natural remedy, but as they are at present very difficult to obtain it will be best for you to make as free a use as possible of wood ash mixed with the compost.

Communications Received. — *J. S., Gardener.* Herts—Brewer—*T. N., A. H., J. G. W., T. & Co.* — *J. W., H. B., J. W. W., D., S., Cymro.* — *H. W. W., J. W. F., E. S. S., W. R. D., G. C. J.*

THE Gardeners' Chronicle

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THE HISTORY OF CULTIVATED FRUITS

AS TOLD IN THE LIVES OF GREAT POMOLOGISTS.

VIII.—THOMAS ANDREW KNIGHT.*

THE advance of pomology in Britain before the nineteenth century was largely dependent on the stimulating influence of foreign countries, and especially on that of France. The cultural side of the science had, at that time, in large measure, broken away from its alien tutors and begun an independent existence. In cultural matters, however, progress had come to a stop, and the authors of the time expended their energies in dialectics rather than in research. On the Continent a new school was arising, which made the production of new varieties of fruits by cross-fertilisation its principal study; and it was not long before this movement spread into England and aroused interest and eventually imitation. The leader of this movement forms the subject of the present memoir.

As before noted, the disregard of Bacon's suggestive hint as to the cross-breeding of fruits, and of Bradley's actual experiments, was very remarkable. The versatile Evelyn in his *Sylva* also pointed to this method of improving varieties in the following words: "Nothing is more facile than to raise new kinds of Apples, ad infinitum, from kernels, yet in that Apple country (Hereford) so much addicted to orchards, we could never encounter more than two or three persons that did believe it." It is not strange,

therefore, to read that the artificial crosses made by Knight were received as a novelty, and the explanation of the functions of pistil and stamen came as a revelation to gardeners of that date.

Thomas Andrew Knight was, by inclination and circumstances, well fitted to launch such experimental work in this country. His father was vicar of Ribblesford and Bewdley, in Worcestershire, and possessor of a considerable fortune, and was thus able to give his son a good education.

read; an excellent plan in general, but one which led him sorely astray when he touched upon subjects where historical evidence was necessary.

In 1790 he married Frances Felton, of Woodhall, near Shrewsbury, and settled at Elton, a name which the well-known Cherry still commemorates. Soon after this he became acquainted with Sir Joseph Banks, that great stimulator of research, and the result was a series of papers which placed Knight in a prominent position as



THOMAS ANDREW KNIGHT.

The time spent at Oxford by Knight was not remarkable for any severe application to work; his tastes being of the country gentleman order, he preferred an outdoor life to an undue consumption of midnight oil. His remarkable memory, however, enabled him to gain a knowledge of Latin and Greek with the minimum of work, and, in after years, this acquirement permitted him to grace his writings with Latin quotations, an indispensable decoration in Georgian days. In the study of nature he always preferred to observe rather than to

a scientific horticulturist. In 1795 his first paper was communicated to the Royal Society. It was entitled "Upon Inheritance of Decay Among Fruit Trees and the Propagation of Debility by Grafting." In this he enunciated his famous theory of the limited duration of fruit trees. In his opinion no Apple, for example, could last longer than 200 years, even if regrafted; the young trees would show all the signs of age displayed by the original tree. His opinion is summarised in the following quotations: "From the description

* The previous articles appeared in our issues for June 14, July 26 and August 31, 1913, May 2, December 5 and 26, 1914, and June 12, 1915.

Parkinson, who wrote in 1629, has given of Apples cultivated in his time, it is evident that those now known by the same names are different, and probably new varieties, and though many of those mentioned by Evelyn, who wrote between thirty and forty years later, still remain, they appear no longer to deserve the attention of the planter. The Moil and its successful rival, the Redstreak, with the Musts and Golden Pippin, are in the last stages of decay, and the Stire and the Fox Whelp are hastening rapidly after them." "All efforts which have hitherto been made to propagate healthy trees of those varieties which have been long in cultivation, have, I believe, been entirely unsuccessful. The grafts grow well for two or three years, after which they become cankered and mossy, and appear, what I consider them really to be, parts of the bearing branches of diseased trees."

While it would be rash to dismiss this theory as totally unfounded, it cannot be accepted in the extreme form as stated by Knight. Since we can still grow the old Golden Pippin, Fox Whelp and Court Pendû Plat Apples, and it is quite possible that Shakespeare may have refreshed himself with a dish of Jargonelle Pears, it is evident that an age limit such as Knight placed is not a general rule. In this matter it is easy to see that a knowledge of pomological literature would have prevented this statement in its dogmatic form.

Happily, Knight's contributions to pomology did not stop at the promulgation of theories, and it is mainly as a producer of new varieties of fruits by intentional crosses that he claims our remembrance and gratitude. His principal experiments were with Apples, Cherries, Strawberries, Nectarines, Currants, Pears and Plums. In the first-named he endeavoured to obtain by crossing with the Siberian Crab a variety of greater hardiness and range of cultivation. The results of this, however, were disappointing, and his Apples, with one exception, were not of remarkable merit. The most important of those crosses in which the Siberian Crab was used are the Siberian Harvey, Siberian Crab x Golden Harvey (an attempt to combine the vigour of the former with the sweetness of the latter), and the Foxley, Siberian Crab x Golden Pippin. The Grange Apple and the Downton Pippin were both the result of a crossing between the Golden Pippin and the Orange Pippin. In both these fruits the influence of the Golden Pippin is obvious, but neither have held a place among more modern varieties. The only Apple which is still in general cultivation is the Yellow Ingestrie, so named from Ingestrie, the seat of Earl Talbot (pronounced Ingstre). This valuable fruit, which resulted from a cross between the Orange and Golden Pippins, is largely grown on the brick earth soils of Kent for the London market, where it is often called Summer Golden Pippin, a name belonging rightly to a distinct and earlier Apple. The same cross also produced the Red Ingestrie, an attractive fruit of the Golden Reinette type, now rarely seen. Knight's other Apples—the Grange, Spring Grove Codlin, Bridgwood Pippin and the Downton Pippin—are now out of general cultivation, though trees doubtless exist in old-world gardens.

Knight's greater successes were secured with Cherries, of which three still remain in the front rank. A cross between the Bigarreau and the Jay Duke produced the Black Eagle and the Waterloo, two fruits of great value which are still largely grown in Kentish Cherry orchards. The third variety, the Elton, was raised in 1806 from the White Heart, and is a dessert fruit of the highest quality, not possessing the rather tough flesh generally found in the Bigarreau Cherries. Knight was impressed by the hardiness and fertility of the Morello Cherry, and raised many seedlings from it. These, however, all proved sterile, even when pollinated, though the trees grew and flowered well.

The Pears which Knight raised were numer-

ous, but among them few are now cultivated. Of these Monarch is undoubtedly the best, combining good flavour with free cropping habits, and ripening after Christmas, a season when good Pears are not plentiful.

The varieties of Nectarines raised at Downton have not held their own, but Impératrice, Downton, Ickworth and Althorp gained some popularity in their day.

In the smaller fruits Knight scored some successes. Among Strawberries Elton and Downton and among Red Currants Knight's Red and Knight's Sweet Red are still cultivated and appreciated.

Of the work done by Knight on the cultural side of pomology space will not permit a detailed review; but the early numbers of the *Transactions of the Royal Horticultural Society* show that his knowledge of this subject was wide and thorough, and the same may be said of his researches into vegetable physiology. His study, moreover, did not stop at these subjects, and we find him corresponding on zoology and ornithology with Sir Humphrey Davy, De Candolle, Huber and other notables of the day.

Circumstances had in later life caused him to move to Downton Castle, an estate of 10,000 acres, and here he led the congenial life of the country squire, experimenting in sheep-breeding and taking part in the administration of the Poor Law and other local matters. His last years were marred by recurrent illness, and he died in May, 1838, in London, where he had journeyed to take the chair at the anniversary meeting of the Royal Horticultural Society, over which he had long presided.

In Thomas Andrew Knight we have an example of the gifted amateur who, though lacking scientific training, is able by unobtrusive work to add some few facts to the general store, and whose infectious enthusiasm does even more by its stimulating influence. As the first to show the methods and results of the scientific cross-breeding of fruits, he takes an important place in the history of British pomology. *E. A. Bunyard.*

NOTICES OF BOOKS.

FOR VILLA GARDENERS.*

THE villa garden dealt with in this work is a strip of ground approximately 100 feet by 25 feet and contains a lawn, herbaceous borders, rockeries, a fernery, a moraine, a bog or two, a valley, Rose beds and Rose arches, with a little wall garden, and a few trees and shrubs thrown in. If one measures off 100 feet by 25 feet and tries to conceive how it is done, one is fain to confess that the arranging and planting must have been the work of a genius. It is true the moraine occupies only 2 feet, one of the Rose beds is but a yard square, and probably the other parts are proportionately diminutive, but the mutton in parvo is nevertheless there. The book takes the form of a monthly review, with digressions, of what passes in the garden. The author, as a rule, does not say how this, that and the other has been done, and he frankly tells his readers not to expect difficulties to be solved. His tastes are vaguely wide. He has explored Teesdale for its treasures of Lucken Gowans and Oak Ferns, and Wensley Dale for its Lady Slippers, and makes room in his plethoric garden for such common weeds as Bird's Foot Trefoil, Rock Roses, Orchis Morio, Ragged Robin and Marsh Marigolds. He hints of rambles on the Alps in pursuit of Dianthus and Primula for his rockeries and tiny moraine.

The book is very pleasantly written. This is the way the author speaks of the feeling many of us have for particular plants:

"We greet our Columbines, Paeonies and Gentians each spring with a keenness allied to

* *My Villa Garden.* By S. Graveson. (London: Headley Bros.) Price 2s.6d. net.

that with which we greet a returning friend from over the sea. Our mental attitude towards the flowers we love is very much that of lovers. The opening Paeonies recall the memories of our first introduction to one another years ago in an old cottage garden carefully tended by a signalman and his homely spouse. The opening Gentian flowers recall a first meeting on the upper pastures above the Pine woods of Lanslebourg. What a day of days that was." And of annuals thus: "They are gay, they are winsome, and they try hard to please, but, after all, they are too much like actors on the stage, brilliantly clever and marvellously bejewelled, but when the curtain is rung down they are no longer a part of our life."

Though the illustrations are not so good as the text, the book ought to make its way into the homes of those who own a garden similar to that chronicled in its pages. *B.*

ORCHID NOTES AND CLEANINGS.

SANDER'S LIST OF HYBRID ORCHIDS.

SCIENCE, as well as horticulture, urgently requires that every available means of correctly recording the parentages of hybrid Orchids and their ancestry should be resorted to in order that the many interesting points which the great Orchid family has already disclosed may be elaborated. Orchidists are always glad of information on the manner in which so many beautiful hybrids, with their erratic variations, have been obtained, and on the means of ensuring increasingly good results in future. The great need of the hybridist has always been a reliable record of the work already done. Messrs. F. Sander and Sons, St. Albans, first for their own use and later for the benefit of all Orchid hybridists, have always kept careful records, their book of 123 interleaved pages, with supplement, dated 1912, being by far the best of such publications up to that period. Since that time they have printed annual supplements, but the difficulty of separate reference to each supplement, and the need of various alterations (more particularly to bring the records into line with those of the Royal Horticultural Society), necessitated a thorough revision, and their new hybrid Orchid list, completed up to the present month, will be recognised as the standard work on the subject. Particular care has been taken to employ in every case the correct name, with such success that the nomenclature in this work will form a safe and trustworthy guide to Orchid growers, both British and foreign. The "Foreword," by Mr. J. Gurney Fowler, chairman of the Royal Horticultural Society's Orchid Committee, while being an admirable appreciation of the work, is also a worthy contribution to Orchid lore.

In the course of his remarks, Mr. J. Gurney Fowler, after touching on the various stages in the evolution of Orchid hybrids and the increasing difficulty in determining whether any particular cross has been named before or not, points out the ease with which it can be accomplished by reference to this new work. He remarks, "As a guide to the hybridist, this book is invaluable, and as I believe all records have been searched up to July 18, 1915, the text used in the title-page, 'Concise, Reliable, and Indispensable,' is, I think, well merited."

Mr. Fred K. Sander is chiefly responsible for the revision and completion of this work, which embraces particulars of all known hybrid Orchids. There are ruled blank pages between each leaf, on which to fill in new hybrids as they appear. The hybrid Orchid list published periodically in the *Gardeners' Chronicle*, containing the names, parentages, and raiser or exhibitor of novelties as they appear, will help to keep the work tolerably complete pending new issues.

STACHYURUS CHINENSIS, FRANCHET.

THE genus *Stachyurus* has long been known, although not so well as it ought to be, by *S. praecox*, a species introduced from Japan. This is a hardy deciduous shrub remarkable for producing stiff, perfectly pendulous racemes of pale-yellow flowers in February and March. It is said to grow 10 feet high in Japan, and there are specimens 6 or 7 feet high in this country. The flowering spray illustrated in fig. 47 is of a closely allied species from Central and Western China, which Franchet named *S. chinensis* in 1893. The plant is now fairly common in gardens through having been more than once introduced by Mr. E. H. Wilson. The branch figured was taken from a plant growing near the King William's Temple in Kew Gardens, which made a very charming display last March and April. Growing near it is a plant of *S. praecox*, and out of flower it is difficult to distinguish one species from the other. The young twigs of *S. praecox*, however, are of a brighter,

tion to the variety of its climate—as indicated by a rainfall ranging from 40 inches in the north to less than 10 inches in the San Diego country—he draws attention to the richness of the native flora, combating the general idea that the flowering season is a short one. With the advent of the first rains the hillsides become decked with flowers, and during January and February a host of plants burst into bloom—*Eschscholtzia*, *Coreopsis*, *Nemophila*, *Platystemon*, *Mimulus*, *Gilia*, *Lupinus*, *Pentstemon*, *Delphinium*, *Calochortus*, *Clarkia*, *Godetia*, *Aquilegia* and species of many another far-famed horticultural genus.

The traveller wending northward may, if he progress in leisurely fashion, find flowers all the way, for in the moist woods of the northern region the flowering season is some six months later than in the more arid southern part of the State.

In the former region in the autumn the woods are bright with wild *Azaleas*, *Rhododendrons*, and *Arbutus*, all flanked by the giant *Redwoods*, and even later in the year the mountains show many an enchanting Alpine plant.

on the underside, *Q. californica* (Black Oak); *Q. agrifolia* (Live Oak), and of Pines, *Pinus Lambertiana* (Sugar Pine), *P. ponderosa* (Yellow Pine), *P. radiata* or *insignis*, Monterey Pine, *Abies grandis*, White Fir, *Libocedrus decurrens* (Incense Cedar), and *Cupressus macrocarpa* (Monterey Cypress).

The variety of physical features and of climate has permitted the introduction of many species native both of semi-tropical countries and of dry regions such as Australia. Thus the *Acacia* and the *Eucalyptus* have found a new home in California. Not without reason has this State been called the fruit-growers' Paradise. Beside the *Citrus* fruits many tender sorts of commercial value have been and are being planted—*Avocado*, *Anona*, *Feijoa*, *Psidium*.

The physical extremes are reflected in the vegetation—in the far south, where little rain falls, the *Cactus*, *Yucca* and *Artemisia* flourish in the hills, and *Washingtonia* Palms in the cañons. In the far north, the region of the big trees, the winds from the ocean bring moisture for the luxuriant growth of



FIG. 47.—*STACHYURUS CHINENSIS*: FLOWERS GREENISH-YELLOW.

[Photograph by C. P. Raffill.]

redder brown, the flowers a rather more greenish-yellow, and according to Mr. Rehder the fruits are larger than those of *S. chinensis*. As ornamental shrubs the two are practically identical, except that *S. chinensis* has the valuable characteristic of flowering a fortnight later than *S. praecox*, and thereby providing a succession to it. Both these shrubs grow best in a sunny position, and should be planted in lightish loam with abundant leaf-soil added. W. J. B.

CALIFORNIA.

THE exhibitions at San Francisco and at San Diego, and the holding of the annual meeting of the Society of American Florists at the former city, have provided occasion for the issue by our contemporary, the *Florists' Exchange* (August 7, 1915), of an admirable supplement on the horticultural history of California.

Mr. Leonard Coates writes of the physical features of California, and after drawing atten-

Evergreen trees and shrubs are among the greatest beauties of the Californian flora, and include species of many genera native or common here—*Acer*, *Salix*, *Quercus*, *Populus*, *Platanus*, *Alnus*, etc., and also such plants as *Arbutus Menziesii*, *Arctostaphylos*, *Ceanothus*, *Garrya* and *Romneya*. *Ceanothus* covers the hillsides with its panicles of blue and white. Of shrubs and trees distinguished by their aromatic fragrance are *Umbellularia* (Californian Laurel), *Eriodictyon glutinosum*, the *Audibertias*, *Calycanthus* and the lowly *Micromeria Douglasii*.

On the subject of trees, mention is made, among others, of *Sequoia gigantea* of the Sierra Nevada, and the yet more beautiful *S. sempervirens* of the coast range, that series of broken ranges of mountains which runs parallel with the coast from north to south, covering a varying width of from 10 to 20 miles. The hills of the Coast Range usually run from 500 to 2,000 feet, but occasionally rise to 4,000 feet. Other notable trees are *Quercus densiflora* (Tan Bark Oak), with dark Chestnut-like evergreen leaves, bronze

a rich flora. Besides the groves of Orange and Lemon which are to be found almost everywhere, a great Grape-growing industry thrives. Its centre is the San Joaquin valley about Fresno, where thousands of acres are planted with "Muscats." In the Santa Clara Valley Plums and Apricots are largely grown. Rice flourishes in the overflow river lands, and in the extreme south-west, in Imperial Valley, Cotton is becoming a staple crop. In that valley Grapes ripen out-of-doors in June, and to illustrate the rapidity of growth in the warm interior valleys of the south, it is remarked that a propagator may, if he care to do so, plant a Peach stone in February, bud the plant in June, remove the top and have a developed Peach tree 3 feet high by November, plant it in the orchard, and, if it be not pruned, pick several fruits the next summer—from seed to fruit in 16 months.

Even so brief a sketch as this serves to justify the claim of Mr. Kruckenberg, who writes on the horticulture of California, that that State

deserves the title of the Horticultural State of the Union. Its present name, the Golden State, is not nearly so well deserved, for whereas the gold won from the soil annually is worth some 17 millions of dollars, the fruits won from the soil and air are worth three times that amount.

The rise of California as a seed-growing State has been astonishingly rapid. Its flowers, plants, and nursery products now yield over 3½ million dollars per annum. About 6,000 acres are devoted to the growing of plants and flowers. We have been able only to draw attention to a few of the many interesting articles which have been brought together by the *Florists' Exchange* in this Californian supplement; but all are well worth reading, and do great credit to the enterprise of our American contemporary.

TREES AND SHRUBS.

PLANTING QUICK OR PRIVET HEDGES.

THE number of Quick plants generally used in making a hedge is three to the foot, and in the case of Privet 10 inches is allowed from plant to plant. For a single-row hedge this method is successful, especially if the plants are cut down the same season to within 4 inches of their base; this induces shoots to grow out from the bottom, and a good, close hedge is quickly produced. There is, however, another method which will, with care, produce equally good results from a less expenditure. Plants about 2 feet long are chosen and the tips (about 6 inches) cut off. The plants are then laid flat on the ground along the line of the proposed hedge, and secured to the surface with a stout peg. At the same time the roots are carefully and firmly put into the ground. As growth begins and proceeds from the horizontal plants, the shoots take naturally an erect position, and grow vigorously as long as the roots are well supplied with moisture. The growth of a hedge planted in this way often attains 2 feet the first season, and if the plants are cut back to 18 inches or less the following spring, the hedge will be of exceptional thickness and firmness at the base. The cost is much less than in the case of the upright method, as fewer plants are required. *E. Molyneux.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables, Supplement, Gard. Chron., July 24, 1915.)

(Concluded from p. 134.)

8, ENGLAND, S.W.

DEVONSHIRE.—Apple blossom was very plentiful, but was much damaged by the easterly winds which so often prevail when fruit blossom is opening. This has been noticeable in the district for the past six years. *W. Lock, Eastcliffe Gardens, Teignmouth.*

GLOUCESTERSHIRE.—Apples, Pears, and Plums all bloomed remarkably well, but some of the Apple trees are affected with blight. The Pear trees are healthy, and, notwithstanding the great crop of last year, are bearing fairly well. Plum trees are loaded with fruit. Of Cherries, Morellos and May Dukes are satisfactory, but the choicer varieties are somewhat scarce. Apricot trees are bearing a light crop. Black and Red Currants, Gooseberries, Raspberries and Loganberries are plentiful and good. We had a fair crop of Strawberries, the young plants producing good, large fruit, the older ones were checked by the drought. Nuts will only yield a light crop. There was no rain here from May 19 till June 25. Soil in the fruit garden is fairly deep and friable, overlying the old red sandstone formation. *John Banting, Tortworth Gardens, Folfield.*

— In this county Apples, Pears and Plums are largely grown in grass orchards. There was abundant blossom, and the outlook was at one time very promising, but a long spell of dry weather in May and June, which favoured a very severe attack of insect pests, altered the outlook considerably. There will probably be fair crops of fruit, however, both of commercial Apples and Pears and cider and perry varieties. I do not anticipate that Plums will be as plentiful as they were last year. Gooseberries are good, but Black and Red Currants are adversely affected by severe attacks of aphids. The Strawberry crop was light, and the picking season short on account of the dry weather. *G. H. Hollingworth, County Education Office, Gloucester.*

— In these gardens the fruit crops of all kinds are very satisfactory. Apple and Pear trees which bore abundantly last year are also bearing well now, although they do not require thinning to the extent they did last season. There are large crops of Apricots, Peaches, Plums and Cherries. Black and Red Currants are up to the average, and there was an abundance of Raspberries and Strawberries. *Fredrick C. Walton, Stanley Park Gardens, Stroud.*

— I never saw the Apple trees more laden with blossom than they were this year, nor such a quantity of fruit set; both dessert and culinary varieties required a great deal of thinning. Aphids has been very troublesome, and the foliage is not so clean and vigorous as I should like to see it. Pears, too, set well, but some of the choicer varieties were attacked by the midges; however, there is still a good crop left. The crops of Plums on walls are good, but the standard trees which bore heavily last year are yielding a moderate crop. The varieties *Victoria* and *Rivers' Early Prolific* are carrying the most fruit, and I consider these the two most reliable varieties to grow. Cherries set well, but the greater portion of the fruit dropped, owing to the drought and blight. There is a good average crop of Peaches and Nectarines. Apricots are under the average, many of the branches having died. I find the variety *Moorepark* the best to grow. There was an abundant crop of small fruits. The crop of Strawberries was an average one, the varieties *Royal Sovereign* and *Givon's Late Prolific* do best with me. Our soil is light and porous, with a subsoil of stiff clay. *A. Chapman, Westonbirt Gardens, Tetbury.*

— Apples, Pears and Plums are yielding average crops. The Pear trees are clean and healthy, but the Apple and Plum are badly attacked by aphids. Gooseberries, Currants and Raspberries are good and clean. The Strawberries were not so large as usual, but the fruits were of good flavour. *W. H. Berry, Highnam Court Gardens, Gloucester.*

HEREFORDSHIRE.—The Apple crop here is a light one, due in a great measure to the strain on the trees last season, when they carried a heavy crop. There is a good, healthy crop of Pears. Plums are up to the average, and the trees are growing well, especially considering they have been badly attacked by aphids, and through shortness of labour this spring we have been unable to deal with the pest. Small fruits are yielding well, but Strawberries, owing to the drought, were small, and the plants suffered. Our soil is light and sandy, resting on sandstone. *Thomas Spencer, Goodrich Court Gardens, Ross.*

— All fruit trees here have been continually attacked by aphids, caterpillar and other insect pests, besides which they have suffered from the prolonged drought. Pears and Plums flowered profusely, but failed to set their fruit, this being due, perhaps, to weakness after carrying such heavy crops last year. Lying very high we have escaped all spring frosts, though the surrounding hills were covered with

snow on May 12, 13, 14. The soil is light, easy-working loam on limestone. *A. J. Morris, Downton Castle Gardens, Ludlow.*

MONMOUTHSHIRE.—The Apple crop may be classed as good. The trees are in excellent health, although woolly aphids is unusually prevalent. The Pear crop is thin, and in a measure this may be attributed to attacks of the Pear midge. Plums bear a moderate crop, owing to the blossoms in some low situations having been damaged by frosts. Peaches and Nectarines suffered in a like manner. Early-flowering Strawberries also were injured in some degree by frosts. The July rains have decidedly improved the prospects of the later fruit crops. *Thos. Coomber, The Hendre Gardens, Monmouth.*

SOMERSETSHIRE.—The fruit crops generally are very good, but Pears and Plums are scarce. Apples are rather uneven, many of the trees having a very heavy crop and others none at all. Strawberries and Raspberries have been plentiful and good, and of other small fruits there have been average crops. Aphids has been troublesome, and most fruit suffered from the long spell of rainless weather from early May to the end of June. *George Shawley, Halswell Park Gardens, Bridgwater.*

— The soil here is of a very dry nature, the garden being situated on the side of a hill about 180 feet above sea level. The Apple and Pear crops are much less satisfactory than last year. *E. A. Hussey, Leigh House Gardens, near Chard.*

WORCESTERSHIRE.—The fruit crops generally in this district are very good, with the exception of Peaches and Apricots, which were damaged by cold, wet and dull weather when flowering. Late frosts have not affected us, but the period of drought, with cold, north-easterly winds, checked the fruit; yet there will be a good average yield of fruit. *A. Young, Witley Court Gardens, Worcester.*

— Apples are yielding good crops all round, but the trees have been attacked persistently by aphids. Pears are clean, and have good crops. Of Plums, the foliage has suffered considerably from aphids. Small fruits are abundant and good. The early varieties of Strawberries were good, but the mid-season ones suffered from drought, and were soon over; later varieties on north borders have fruited splendidly, especially *Givon's Late Prolific* and *Waterloo*. A heavy hailstorm on July 2 damaged much of the fruit, and made deep indentations on both Apple and Pear fruits. *W. Crump, Madresfield Court Gardens, Malvern.*

— All fruits suffered badly from drought in May and June, but the Apples *Blenheim Pippin* and *King of the Pippins* are yielding good crops. Some trees are loaded with Apples, whilst others have none. Raspberries and Red and White Currants are yielding well, and the fruit is of good quality. Pears, on the whole, are finer than last year. Most varieties of Plums are plentiful, particularly *Pershire*, and *Victoria* is very fair. The Strawberry crop lasted about a fortnight longer than usual, but the quality was poor. Our soil varies, in some places being brown and sandy, in others a good sandy loam, while in others it is a stiff, marly clay, scarcely workable. *Thos. Watkins, The Grange Gardens, Claines.*

— The fruit crops in these gardens are very disappointing. There was an abundance of blossom on Pear trees, but many of the fruits dropped. This I attribute to drought and cold winds in early spring. Strawberries also promised well, but owing to the drought the fruit was small. Raspberries are of good quality, and there is a heavy crop. Our soil is a good, medium loam, resting on a bed of sandstone. *Ernest Avery, Finstall Park Gardens, Bromsgrove.*

— The frosts in May did much damage to Pears, Plums, Gooseberries and Strawberries in low positions. On ground fifty or a hundred feet higher the crops escaped injury. Consequently there are heavy crops in some places and poor crops in others. Heavy hailstorms on June 30 and July 4 injured much fruit on Apple, Pear and Plum trees in certain districts. *James Udale, Ombersley Road, Droitwich.*

WALES.

ANGLESEY.—The fruit crops this year are up to the average. The soil is very light and stony, and is not good for fruit in general. Peaches and Nectarines do very badly, but Gooseberries and Raspberries succeed. *W. Tiso, Glynarth Palace Gardens, Menai Bridge.*

CARDIGANSHIRE.—Taken as a whole, the fruit crops are very good. Plums and Pears are not so plentiful as last year, but they promise to be good. The growth is free from insect pests, with the exception of some of the Plums. *W. Phillips, Derry Ormond Park Gardens.*

CARNARVONSHIRE.—Apples, Pears and Plums flowered profusely, but the set was most disappointing, the reason being, I think, that the trees carried heavy crops last year. Aphis is not very troublesome so far this season. Our soil is very light, and the subsoil gravel, therefore all fruits require to be heavily mulched to give good results. June was a very dry, hot month, only 1.10 inch of rain being registered. *J. S. Higgins, Glynllivon Gardens.*

DENBIGHSHIRE.—The fruit crops in this district are good on the whole. Some varieties of Apples are carrying heavy crops, and need thinning. Small fruits are plentiful, and Strawberries have been very good. Owing to the drought the trees were badly damaged by insect pests. The soil is rather stiff, overlying a clay subsoil. *J. A. Jones, Chirk Castle Gardens, Ruabon.*

GLAMORGANSHIRE.—The fruit crops in this district are up to the average. All kinds showed great promise, but the cold nights during part of May and early June, and the exceptional quantity of aphis with which all kinds of fruit trees have been infested, caused a great percentage of the fruit to drop. Peaches and Nectarines are carrying large crops, but I never remember the leaves so badly infested with blister as they were early in the season. Apples are an average crop, but like other fruit trees badly infested with aphis. Pears, although they promised well, are under the average, and the same applies to Plums. All small fruits were plentiful and good. Strawberries have been exceptionally fine, but owing to the dry weather the season was short. *R. Milner, Margam Park Gardens, Port Talbot.*

MONTGOMERYSHIRE.—Cherries and Strawberries suffered very much from the drought. Probably the subsoil being gravel would account for these fruits being so poor. When planting young fruit trees I always put a stone or slate slab underneath roots to keep them near the surface, as the soil is very shallow. *Alfred Gribble, Plas-Machynlleth Gardens.*

PEMBROKESHIRE.—The fruit crops are fairly satisfactory in this district, with the exception of Pears, upon which we can never rely. Apples are very good, but in late, cold gardens the fruit is less plentiful. Small fruit is almost a failure in many gardens, but in our sheltered situation there is an abundant crop. Strawberries were good to begin with, but the season was curtailed by drought. *Geo. Griffin, Slebeck Park Gardens, Haverfordwest.*

— Apples are not plentiful in this district, but are of good quality. Pears bear a good crop, and so do Peaches and Nectarines. Plums are not plentiful, nor are

Cherries. Strawberries were not good, but Raspberries, Gooseberries and Currants, both Red and Black, are yielding abundant crops. *W. A. Baldwin, Clyntfrew Gardens, Boncath.*

RADNORSHIRE.—We have, on the whole, about average crops of fruit. Apples are rather under the average, but certainly are not scarce. Plums are very few, but this was to be expected after the glut of last year, when every variety was laden with fruit. Small fruits are a good average, and Raspberries very plentiful. The drought coming soon after the late frost rendered early varieties of Strawberries, such as King George and Royal Sovereign, failures. Rain improved the late varieties, but they were not good. *J. MacCormack, Mnesllwch Castle Gardens, Glasbury, Radnorshire.*

IRELAND.

9.—IRELAND, N.

DOWN.—The cold winds and want of pollinating insects spoiled what promised to be record crops of Apples and Pears. There has been a remarkable crop of Raspberries, and all bush fruits yielded well. The dry weather affected early Strawberries, but the rains came in time to improve later varieties, and the fruit was good and plentiful. The soil here is a stiff loam with a rocky bottom. *T. W. Bolas, Mount Stewart Gardens, Newtownards.*

FERMANAGH.—Small fruits have done very well, the crops being the largest for many years. Strawberries were good, but many were spoiled by rain. The Apple crop is almost a failure, although some Apple trees late in flowering have a fair crop. The soil in this locality is peaty. *J. Moncrieff, Florence Court Gardens, Enniskillen.*

LONDONDERRY.—Late frosts in the month of May did much damage, especially to Cherries and Plums. Hailstorms injured the Black Currants, otherwise we should have had an abundant crop of these fruits. Some varieties of late Apples are bearing large crops, whilst the early varieties are scarce. The soil in this district is of a gravelly nature, not suitable for Apples and standard Pears, which are more or less affected with canker. *G. M., Garvaghy.*

MONAGHAN.—All fruit trees and bushes flowered well here, and as we had no late frosts to damage them our fruit crops are very satisfactory. Apples have had to be thinned in some cases. Our soil is heavy and wet, in some parts being bog land. *J. Hepburn, Dartrey Gardens.*

TYRONE.—The fruit crops this year are on the whole satisfactory. Pears have been disappointing, as after a fine show of bloom and an apparently good set, many trees have cast their fruit, until less than half a crop remains, although in other cases they have retained enough for a good average crop or slightly over. Insect pests have not been more troublesome than usual, but woolly aphis on Apples has been rather prevalent; also Black Fly on Cherries. Silver-leaf is becoming common amongst Plums, especially the Victoria variety, and I have noted one or two cases of the Gooseberry Mildew in the neighbourhood. *Fred. W. Walker, Sion House Gardens, Sion Mills.*

WESTMEATH.—The prospects of abundant fruit crops were seldom more promising than at present. Strawberries, however, are an exception, the continued drought during May and June having had a very adverse effect on the crop. Pears are variable, some trees carrying very heavy crops, and others bearing none. Raspberries are much more plentiful than they have been for some time. The caterpillar was very troublesome during the drought, and did considerable damage to Gooseberries, and in some cases to Red and White Currants. Our soil here is medium, heavy in some places. *Geo. Bogie, Pakenham Hall Gardens, Castletppard.*

CORK.—Early June frosts were very injurious to Pears and some varieties of Apples, the varieties suffering most being Allington Pippin, Cox's Orange Pippin and Worcester Pearmain. Codlin Moth and American blight are very troublesome. *M. Colbert, Aghern Gardens, Conna.*

— The spring was a very cold, late one. Aphis is very prevalent, but other insect and fungous pests are not so troublesome as in other seasons. *J. Dearnaby, Magazine Road, Cork.*

KERRY.—Nearly all fruits flowered well, but frosts ruined the prospect of heavy crops in many places. This was most noticeable where the soil is of a boggy nature. Currants, Red, White and Black, are very good in quality, and above average in quantity. Raspberries are extraordinarily plentiful, and their quality is excellent. The soil here is peaty, mostly reclaimed bog, but in the district a good, strong loam is to be found on limestone. *William H. Arrowsmith, Deneen Gardens, Kenmare.*

KILKENNY.—It is seldom we get two such good fruit years in succession as 1914 and 1915. This is especially remarkable in the case of Plums, Apples and pears. Weather conditions during the critical periods were favourable, and, except for a bad aphis attack on Black Currants in May, insect pests have not been troublesome. Gooseberries, however, are a fast disappearing crop in this part of Ireland owing to American Gooseberry mildew. The moist climate is no doubt conducive to the rapid spread of this fungus. *T. E. Tomalin, Bessborough Park Gardens, Piltown.*

LIMERICK.—The Apple and Pear crops in this district are not nearly so heavy as last year, when they were remarkably good both in quantity and quality. Plums promised well early in the season, but are dropping badly now, owing no doubt to the drought of May and June. Gooseberries and Currants carried very heavy crops of fine fruit; the mite on the former is practically unknown in this district. Strawberries are not very plentiful, but are of good quality. The soil is a heavy loam, overlying limestone rock, which is very near the surface in most places. *Harry Nixon, Rockbarton Gardens, Kilmallock.*

LONGFORD.—Apples promised a record crop, and some set well, but others were badly damaged by frost. Pears are an average crop and of good quality. The very dry season adversely affected small fruits. *J. A. Boyle, Castle Forbes Gardens, Newton Forbes.*

QUEEN'S COUNTY.—Fruit is very plentiful in this district, and the quality is exceptionally good. The Strawberry crop was an enormous one, and the fruit was of first-rate quality. The soil here is a light sandy loam. *G. McGlashan, Abbey Leix Gardens.*

WATERFORD.—The fruit crops in this district are up to the average. The absence of late spring frosts assured a good crop of Apples. The standard varieties, such as The Queen, Bramley's Seedling, Lane's Prince Albert and Newton Wonder, are very good. Strawberries were an abundant crop, the fruits of King's Early being exceptionally large. Cherries are rather disappointing, but Plums are yielding a fair average crop, the variety Victoria being plentiful. The soil is rather poor, on a hard clayey bottom. *D. Crombie, Curraghmore Gardens, Portlaur.*

CHANNEL ISLANDS.

JERSEY.—The fruit crops in this district are on the whole poor. The trees flowered well, and there was promise of good crops, but owing to the east wind, frosts, and lack of rain the fruit has nearly all dropped, and the trees have suffered very badly, many having died. The stone fruits seem to suffer most, owing to lack of lime in the soil. *T. Sharman, The Imperial Nursery, St. Heliers.*

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

VINERY.—Vines growing in pots and intended for starting in November should, if the canes are sufficiently hardened, be placed out-of-doors in a sunny position where the rods may be loosely tied to a wall or hedge—the latter for preference. During this resting period very little water is required at the roots, but sufficient must be afforded to prevent the roots from shrivelling. If the pots are covered with some loose material the roots are not likely to need moisture. Young Vines raised from eyes inserted early in the year should be encouraged to complete their growth. Place the plants in full exposure to sunshine, and should the weather be dull employ a little extra fire-heat. Remove all lateral growths, and, save for an occasional damping with the syringe, keep the atmosphere moderately dry. The canes cannot be over-ripened before the leaves fall, when the plants should be completely rested. For this purpose it may be necessary to remove them to a large airy house, where they can be kept better under control than out-of-doors. Early Vines growing in borders also claim attention, particularly if the roots are in an unsatisfactory state, for this condition is best corrected before the Vines are entirely denuded of their foliage. Vines that have completed their growth should be pruned, and where the spurs have become long and unsightly remove a number of them entirely and make provision for training up a new rod from the base. Let the rods be washed thoroughly, and if red spider has been troublesome paint them with a mixture of soft soap, sulphur and paraffin. Remove the spent soil from the surface down to the roots, and replace it with a compost consisting of loam, lime rubble, charcoal, bone-meal, and a fair sprinkling of Vine manure. From now onwards until the Vines are started keep the ventilators open to their fullest extent in order that the Vines may have a complete rest.

LATE GRAPES.—To keep Grapes well into the winter the berries should be ripe by the latest at the end of the present month. In order to prevent unnecessary dampness, and at the same time permit a free circulation of air, pinch all lateral growths.

TOMATOS.—Plants intended for fruiting in winter and early spring should be kept growing steadily. Those that were moved into 5-inch pots some time since should be shifted into their fruiting pots before they become pot-bound. The plants should be encouraged to make sturdy, short-jointed growth by ramming the soil rather firmly. At this stage do not feed the roots, as this may be done more profitably when the first fruits have set. After repotting, water the roots with great care. Grow the plants in a light, airy house until danger by frosts threatens.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

ODONTOGLOSSUM.—Where a representative collection of these Orchids is grown a few plants require attention at the roots at intervals throughout the year, but, as a general rule, the greater number may be repotted in February and the present time, and more especially those of the Colombian group, which include *O. crispum* (with its host of varieties and hybrids), *O. triumphans*, *O. gloriosum*, *O. Pescatorei*, *O. luteo-purpureum*, and *O. Andersonianum*. Many hybrids and certain *Odon-todas* may also be repotted if necessary. Before the plants are rearranged on the staging the interior of the house should be cleansed thor-

oughly and the old moisture-retaining material, whether coke or shingle, renewed. Where a permanent shading has been employed in addition to blinds this should be washed off, as the new growths will make stronger foliage and more solid pseudo-bulbs when the glass is not too densely shaded. On the contrary, an excess of sunlight must not be admitted, or some of the back leaves will turn yellow and drop. All *Odontoglossums* that are making new growth and are about to develop roots from the base may be repotted if necessary. Small plants are best repotted annually, and this should be done without much disturbance at the root, but many of the larger specimens, for example, those growing in 5 or 6-inch pots, that were afforded fresh rooting material last year, will not require this attention. The pots should be filled to one-third of their depth with drainage material, which should be covered with either a small quantity of Sphagnum-moss or the rougher parts of the compost. The soil should consist of *Osmunda* or *A1* fibre, one-half; good quality peat or partly decayed Oak leaves, one-fourth; and Sphagnum-moss, one-fourth; with a sprinkling of sand and finely-crushed crocks. In repotting remove the decayed soil and cut off the dead roots and the leafless back pseudo-bulbs, which may be used to increase the stock. The receptacle should be sufficiently large to accommodate the plant for two seasons. Press the compost moderately firmly, and do not let it reach above the rim of the pot. All the plants that have been repotted may be put together and well watered. Shade the plants from bright sunshine and keep the atmosphere humid by damping the bare spaces whenever they become dry; on bright days a light spraying overhead will be beneficial. Plants that are not quite ready for repotting may be attended to later, but do not defer the work until after the end of September. Each plant should be examined for insect pests, and if thrips are present the young shoots should be dipped in an insecticide and the pots afterwards placed on their sides to allow the specific to drain away.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

GESNERA.—The last batch of tubers of *G. cinnabarina* and *G. chromatella* should be repotted. Place them direct in their flowering pots; any feeding that may be required may be given in the form of liquid manure. Use a similar compost to that recommended in the Calendar for June 19. Owing to the hairiness of the leaves, overhead syringing is not advised, as sediment in the water soon spoils the plants' appearance. For the same reason, keep them free from insects, as washing or syringing in any form is equally objectionable. Grow the plants in a position near to the roof-glass in a light pit, with a temperature between 60° and 70°.

CYCLAMEN LATIFOLIUM (PERSICUM).—Now is the time to sow seeds of greenhouse *Cyclamens* if blooms are required within fifteen months of the time of sowing. The best method is to sow the seed soon after it is ripe in pans or boxes which have been well soaked in water, properly crocked and filled with a mixture of light loam, leaf-mould or peat and sand. Sow thinly, cover the seeds with a little fine soil and gently press the surface. Water the soil lightly and stand the pan in some moisture-holding material near to the roof-glass. Germinate the seeds in a temperature of about 60°. Take care that the soil never becomes in the least dry, covering the pans with a piece of glass to insure close conditions. As soon as the young plants have developed their first adult leaves, prick them off into larger pans or boxes, using similar compost to that employed in the seed-pan. Continue to grow the plants in the same temperature as at first, but when they have made a second leaf the thermometer may be allowed to drop a few degrees. Pot the seedlings later into single pots, suited to the size of the individuals, using the compost at this and subsequent pottings in a rougher condition, one half of it to consist of loam, with plenty of sharp

sand added. Low-roofed houses are best suited for these plants. Excellent results may be obtained by growing them in heated pits, even in winter, provided the temperature does not fall below 45°. When grown in a low temperature, extra care must be taken in watering the roots, or damping off will occur. Any plants which are not yet in their flowering pots should be shifted at once and their growth hastened. Thorough syringings are of the utmost benefit to the plants whilst they are making their growth. As *Cyclamens* are very subject to insect pests, they must be treated with a weak insecticide or fumigated lightly, but both operations must be done with great care, as the young leaves are easily injured.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

VINES.—The stumps of all useless lateral shoots that have been pinched previously should be cut back close to the bud. This will allow the sunlight to ripen the wood and fruit. All loose growths should be tied or nailed securely to the wall or other support. In warm districts the berries are beginning to ripen, and if the bunches are attacked by birds or wasps they should be covered with thin gauze or muslin bags. It may be necessary to thin the bunches that have not yet reached the ripening stage. It is of importance that this should be done in time, as it will tend to increase the size of the berries, and also prevent them from rotting.

INSECT PESTS.—Persistent efforts should be made to rid fruit trees of insect pests as soon as the crops are gathered. Resume the use of the garden engine or hose upon the trees, and particularly Apricots, Peaches and Plums. Red spider may have spread whilst the fruit was ripening, but now insecticides may be used again. Later the trees can be kept healthy by the use of clear water only.

STRAWBERRIES.—Late runners may be planted, and in favourable conditions they will quickly become established. Since the roots grow to a great depth, the ground should be dug deeply or trenched, and enriched with decayed manure; indeed, it can scarcely be made too rich for these plants. After the runners have been planted water them freely until the roots are re-established in the soil. Remove all runners from Strawberries planted in lines in the fruit garden, and place a liberal dressing of manure along the rows as a mulch or fork it lightly into the ground. Do not trim or remove any of the foliage—as is the practice of some—for this not only injures the plants, but leaves the crowns without adequate protection during the winter. A sufficient number of reserve plants should be placed aside for wintering in frames or sheltered places to make good any losses that may occur during the winter, and if these are potted into 5 or 6-inch pots so much the better.

PLANTING.—Preparations should shortly be made for planting fruit trees. The ground may be got ready now, as the wood of many fruit trees of the earlier kinds will be sufficiently ripened by the end of this month to admit of transplanting. One great advantage is gained by early planting: the roots will, if kept well supplied with water, soon develop fresh fibres, and the tree thus become re-established before the winter. This is especially true of the earlier varieties of Peaches and other stone fruits. If the work is done carefully a crop of fruit may be expected from the trees the following season. When the ground has been systematically and properly prepared beforehand, there is less risk of the operation of planting being carried out in a hurried and careless manner.

PEACHES AND NECTARINES.—Trees of the earlier varieties that are cleared of their crops should have all useless shoots removed, and those remaining tied or nailed securely. Later varieties, that are swelling their fruits,

should receive timely assistance by soaking the borders with liquid manure before the fruits reach the ripening stage. Care, however, should be exercised in the use of stimulants, especially to young, vigorous trees. The latter, if healthy and carrying only a light crop, should not be fed, or they may continue growing until late in the season, which is not desirable.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

SHRUBS AND TREES.—Flowering shrubs have bloomed remarkably well during the past and present season. The rains since early July have done much to promote growth, and provided warm sunny weather prevails during the next six weeks to ripen the wood, the promise of a good display of bloom next year should be equally good; the same conditions will also insure a display of colour next October and November. The removal of useless shoots, stirring the soil and keeping it free from weeds will all help to this end. Any proposed planting or rearrangement in the coming autumn should be planned now; and if the various subjects have been noted when in flower, the notes will be helpful. Shrubs at present in bloom include *Buddleia variabilis magnifica*, probably the best of the family; *B. variabilis Wilsonii*, which is just commencing to flower, the pale lavender-coloured flowers being produced on long, pendulous racemes; *Ceanothus Gloire de Versailles*, *C. Ceres*, *C. Arnoldii*, all of which are flowering profusely; *Hydrangea hortensis* in variety, including *Lindleyana*, *Thomas Hogg* and *Madame Moulière*, all of which are desirable varieties and hardy (*H. hortensis rosea* comes an intense blue with us); *H. quercifolia* and *H. paniculata grandiflora*, which is unequalled among dwarf shrubs for blooming in August and September, and is most effective in the foreground of shrubberies or for planting in large beds. A few standard trees of *Acer palmatum atropurpureum* planted among this *Hydrangea* will add to the effect from spring to autumn; or, if desired, the variety may be associated with one of the early spring-flowering shrubs, such as *Cerasus J. H. Veitch*, which grows best in rich loam, needs plenty of water during the summer and should be pruned in the spring. *Clethra alnifolia* (the North-American Pepper tree) and *C. canescens* (a Japanese species) are both covered with fragrant creamy-white blossoms. The list also includes *Sambucus canadensis*, with large heads of white bloom; *Olearia Haastii*, *Spartium Juncenae* (the Spanish Broom) and *Rhus Cotinus* (the Wig Tree). Though too early for planting, the work of preparing the soil may be undertaken if opportunity affords. Fresh ground should be trenched at least 2 feet 6 inches deep, and manure should be added if the soil is of poor quality. In heavy ground of a clayey nature it will well repay to provide drainage, as few subjects thrive in a waterlogged soil.

PROPAGATING SHRUBS.—The present is a suitable time for propagating a number of shrubs from cuttings. With care success is almost certain in the case of such subjects as *Buddleia*, *Ceanothus*, *Crataegus*, *Sambucus canadensis*, *Cotoneaster*, *Veronica*, *Escallonia*, *Cistus*, *Hydrangea*, *Olearia*, *Diervilla*, *Viburnum* and *Myrtus Luma*. Root the cuttings in a close frame, arranged in a shady position, with a layer about 9 inches deep of very sandy soil in the bottom; if a large stock of a particular kind is required, hand-lights or bell-glasses can be used. Should the soil be dry, water it thoroughly the day before inserting the cuttings. Sprinkle a layer of dry silver-sand on the surface so that a little may fall into the hole made by the dibbler, for the base of the cutting to rest on. Choose cuttings of half-ripened shoots, make a sufficient number of each kind as required, and insert them with as little delay as possible. Water the cuttings freely to settle the soil about them and then close the frame or hand-lights, as the case may be. Admit a little fresh air for a short time each day and damp the inside of the frame both mornings and afternoons of fine days. Cuttings of hardy Heaths and of certain

Conifers may be inserted in a mixture of sand and peat, and afforded similar treatment to the others. As root action commences, gradually admit air by tilting the frame or hand-lights.

BORDER CARNATIONS.—The layers of Carnations to be used for propagation may be detached from the parent plants, severing the stems a few days in advance by means of a sharp knife. Lift each root with a good ball of soil, and replant in ground that has been previously prepared. Do not plant deeply, but make the soil firm. A number of plants should be placed in 3-inch pots and wintered in a cold frame to replace any that may fail.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

SPRING ONIONS.—Let the bulbs be dried carefully before they are stored; place them thinly on a hard clean surface and turn them frequently until they are quite dry. Arrange them in the store so that the air will pass freely amongst them throughout the autumn; this season they will need more space than usual, as they are very green.

MUSHROOM BEDS.—If the spawn was inserted in the beginning of August, the young Mushrooms will soon begin to appear. Examine the bed, and if found to be dry, damp it with rainwater gently applied through a fine rose, but do not practise frequent waterings, as this may cause many of the young Mushrooms to be spoiled. If the bed is moderately moist a covering of clean straw placed lightly on the surface will do much to prevent evaporation, and thus obviate the need for water. Continue to collect and prepare material for the making of successional beds. The manure must never be allowed to become sour for want of turning or the prospect of a successful crop will be very slight. Place the horse-droppings in a dry, open shed and turn them frequently until sufficient for the purpose have been collected. When the manure is thoroughly prepared, form the bed, ramming it tightly, and spawn it when the temperature from fermentation is 80°.

WINTER SPINACH.—This is an important winter crop, and the plants should be thinned as soon as they are large enough, also the soil kept stirred with the Dutch hoe. Slugs are frequently troublesome and should be kept in check by dusting soot along the rows from time to time in the early morning. Another sowing may be made on a warm south border, but the plants must be protected from cold winds.

LETTUCE.—Seedling Lettuces should be transplanted from the seed-bed at an early stage to prevent overcrowding. Plant in rich soil and allow plenty of space between the plants, so that the hoe may be used freely amongst them during the autumn. If sheltered positions are available later on, where the plants can be covered with wooden frames in winter, the supply may be continued to the end of the year without much trouble or expense. Another sowing of a good hardy variety may be made at once; provided the weather is mild the plants from this sowing will be of great service.

ENDIVE.—Transplant seedling Endives as soon as possible. Improved Batavian is the best variety for planting now, and the plants should be allowed at least 15 inches each way. The early varieties should be blanched carefully by tying the foliage together with some soft material ten days before the salad is required for use.

CELERY.—The earliest batch of Celery will require earthing. Tie the foliage together with soft string, which should be removed after the fine soil has been placed around the plants with the hand when the foliage is quite dry. Take care that the soil does not enter the centres of the plants. Late-planted Celery should be carefully picked over and all discoloured foliage removed. Hoe the ground carefully.

HOEING.—Hoe the soil between all growing crops, for it is important that the surface be thoroughly broken up and all weeds destroyed before the days become short. Late-set plants may receive a dressing of artificial manure previous to hoeing.

THE APIARY.

By CHLORIS.

ROBBING.—At this time of the year, when the flow of nectar is becoming less, it is not surprising that bees take short cuts to obtaining a load to take home. A favourable opportunity is frequently offered to them by the carelessness of beekeepers, who leave about pieces of comb containing honey. Even during the height of the season a bee often has to visit one hundred heads of Clover to obtain a load; this business necessitates an absence from the hive of one or two hours. During hours of enforced idleness they rob their neighbours, if these have lost a queen or have through some other cause become weak. The taste for robbing is often first acquired by the discovery of a piece of comb. Prevention is better than cure, and this is certainly the case with bees. In order that bees may more easily defend themselves against intruders, all entrances should be arranged so that only one or two bees may pass at a time. If robbing has already begun, nearly close the entrance, so that only one may pass, and place in front a sheet of glass to baffle the robbers. Some beekeepers place a few handfuls of wet grass in front of the hive which is being robbed, as bees will not creep through wet grass. If this plan is adopted, the grass must remain until sundown. In very bad cases a little carbolic acid may be used with advantage in the water (one in 500 of water). Should the colony be queenless, supply a queen, and add a few driven bees to strengthen the hive. Failing driven bees, unite two or more weak colonies, utilising the best queen to head the new stock. Nuclei stocks are often attacked at this time of the year because they are numerically weak.

DRIVEN BEES.—In many parts of rural England cottagers still indulge in the wasteful practice of destroying bees with sulphur in order to take the honey. This method, besides destroying insects which can be ill spared in the interest of rural economy, spoils the delicate aroma of the honey. Many bees are thus uselessly sacrificed in a country where disease has already wrought such havoc. All beekeepers should take care that the bees in and around the apiary are free from disease. Where a number of colonies are to be driven a bag will be necessary, made large enough to prevent the bees from being crushed. The bag should be made as follows:—Take a length of cane or similar material, and make it into a circle, having a diameter of 14 inches. Over this stretch, and securely sew, a piece of stout calico. Next tear a strip of calico, selvedge way, about 16 inches by 4 inches, fold, making it 2 inches wide, and secure it across the calico-covered frame, to be used as a handle when completed. To finish the bag, form 1½ yard of calico into a circle and sew one selvedge to the bottom of the frame. Fasten a length of tape about 6 inches from the top, with which to secure the mouth. All the bees may be emptied into this bag, the best queens being taken home in match-boxes, to be utilised where necessary. The evening is the best time to drive the bees, if the weather be warm. Give the colony to be driven a puff of smoke, and tap the side of the hive to cause the bees to gorge themselves with honey. After allowing two or three minutes to elapse, give them another puff of smoke and overturn the skep, standing at the back; then use the smoker again to drive the bees down. Take the skep to a table on which a bucket has been previously placed, into which the inverted hive of bees should be put. An empty hive is needed to receive the driven bees. This must be fixed to the hive below by a skewer, to act as a hinge, and held in position at the sides by a pair of driving irons. All is now ready for the driving to begin, and this is done by tapping the sides of the full hive with the palms of the hands, continuing until all the bees have left the hive. The operation will take from fifteen to thirty minutes. Watch must be kept for the queens; it is a good plan to stand with one's back to the light, so as to perceive them easily. Where the bees are still on the wing, an empty skep should be placed on the stand to receive those returning from the fields.

EDITORIAL NOTICE.

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

Editors and Publisher. — Our Correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPTEMBER 7—

Scottish Hort. Assoc. Meet.

WEDNESDAY, SEPTEMBER 8—

Royal Caledonian Hort. Soc. Show, in Waverley Market, Edinburgh (2 days).

THURSDAY, SEPTEMBER 9—

Dickson and Robinson's Vegetable Show at Manchester (2 days). B.G.A. (Watford Branch) meet. Lecture by Mr. Cyril Harding.

AVERAGE MEAN TEMPERATURES for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 58.8.

ACTUAL TEMPERATURES:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, September 2 (10 a.m.). Bar. 29.5. Temp. 57°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY

AND FRIDAY—

Dutch Bulbs, by Protheroe and Morris, at 67 and 68, Cheapside, E.C., at 10.30.

MONDAY AND WEDNESDAY—

Bulbs, Bay Trees, etc., at Stevens' Rooms, King Street, Covent Garden.

WEDNESDAY—

Special sale of Bulbs, Palms, Bays, etc., by Protheroe and Morris, at 1.

An Incurrable Rogue.

Most people who cultivate Peas and the habit of observation have observed from time to time plants of culinary Peas with a peculiar "Tare-like" appearance. These Tare-leaved rogues (cf. figs 49 and 50)* are characterised by the possession of stipules and leaves narrower and more pointed than are those of normal plants. The pods borne by such rogues are, even in races which normally bear straight pods, curved and narrow (see fig. 48), and the peas themselves lack sweetness.

The Tare-leaved rogue is the skeleton in the cupboard of the *Pisum* family, and just as among humans, impeccable respectability and pedigree are no guarantee against the appearance of an occasional black sheep, so among these *Pisums* Tare-leaved rogues are just as likely to crop up among the well- as among the ill-bred.

Though the seed-raiser rogue never so vigorously, pulling up and destroying them as they appear, these rogues are apt to reappear in each successive generation. The curious in these matters may observe a close parallel between the methods which Society has adopted in dealing with its incorrigible rogues and those adopted by seedsmen. In the earlier days Society attempted, like the seedsman with his

seed, to purify itself by arming justice with lethal weapons wherewith to destroy all rogues. The method failed, for though one crop was weeded clean, yet "while it slept an enemy sowed Tares," and the incorrigible human rogue reappears in undiminished numbers in each successive generation, till at last Society has recognised that in an understanding of the rogue—of his origin and his nature—lies perhaps a surer method of controlling him. Thus we see the dawn of a scientific criminology. So with the seedsman; he has torn out the Tares, and yet they have come again, and hence he recognises that the problem is one of scientific investigation—on the principle that "il faut tout montrer pour tout guérir." Thus it has come about that the investigation of the Tare-leaved Pea has passed into the most competent hands of

are present. These are the thorough-paced rogues. But in others—intermediate between type and rogue—not all the rogue characteristics are patent. In some, for example, the leaves and stipules may be nearly normal, though beaming rogue-like at the top, and the pods definitely curved (cf. fig. 48). Yet, and herein lies the point of practical importance, these incipient rogues produce among their offspring many thorough-paced rogues. Hence it becomes necessary for the seed-raiser not only to destroy the manifest rogues, but also those which exhibit roguish symptoms. Moreover, since these symptoms are often confined to the youngest parts—those nearest the tip—roguing must be done not only in the seeding stage, but also in the later stages of growth.

Even so, Professor Bateson does not give much hope that the rogues may be eliminated once for all, for, as he has shown, normal plants which exhibit no sign of rogue characters may throw occasionally true rogues. It is, however, not yet certain that this holds good of all varieties, and it may well be that certain of the varieties now in commerce may be found free from this congenital defect.

Of the behaviour of rogues in breeding, much may be said in few words: Thorough rogues beget only rogues.

Normal plants crossed with rogues give nothing but rogues, and the progeny of these are also rogues, even to the third generation. They may look normal when young, but when mature, they exhibit all the stigmata of the Tare-leaved Pea. This remarkable result was obtained in 50 out of 52 crosses. Leaving aside from consideration the two exceptions, we have in this genetical behaviour an example of a class of fact new to the science of plant-breeding: a character introduced from one side only imposes itself on all the descendants, and maintains itself in their descendants. No less remarkable is the fact that rogues may appear in the progeny of normal plants, the descendants of normal plants. We confess that these facts are as astonishing as they are at present inexplicable. But the progress of science depends on the discovery of that which requires explanation. We have no doubt that the mystery will yet yield its secret to their questionings, and, in the meantime, we congratulate Professor Bateson and Miss Pellew, not only on the discovery of a new order of phenomena, but also on pointing the way to a more thorough elimination of the Tare-leaved rogue.

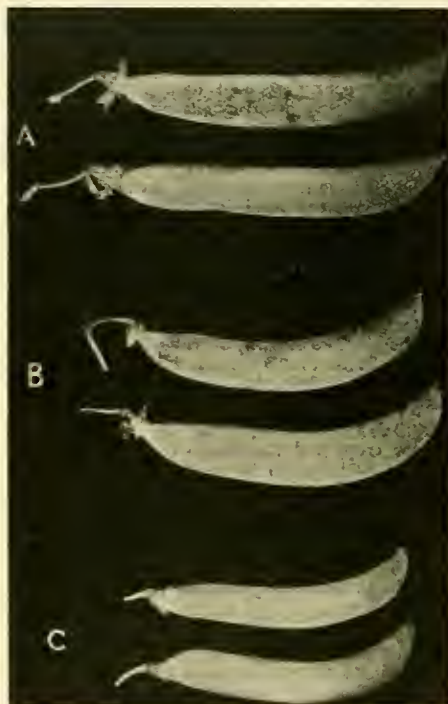


FIG. 48.—PODS—A, STRAIGHT EARLY GIANT TYPE; B, CURVED AS IN INTERMEDIATE CLASS III. C, CURVED AND NARROW AS IN ROGUE

Professor Bateson, the Director of the John Innes Horticultural Institution.

The results of this investigation have now been published (*Journ. of Genetics*, Vol. 5, No. 1, July, 1915) and should be studied with attention by all seed-raisers.

It is true that in spite of the comprehensiveness of the enquiry the nature of the enemy that sowed these Tares has not been discovered. It is also true that neither Professor Bateson nor his colleague, Miss Pellew, is able to prescribe for the prevention of rogues; yet, nevertheless, this research stands out as a very important contribution to genetics. It is valuable both for its practical and scientific results.

With respect to the former, the new fact is established that there is a series of degrees of Tare-leaved roguishness. In some plants all the symptoms—narrow-pointed leaves, curved and narrow pods—

WAR HORTICULTURAL RELIEF FUND.—On p. 156 we publish a list of subscribers to the War Horticultural Relief Fund of the Royal Horticultural Society. It is gratifying to learn that over £5,000 has been promised, but the need for help is very great, and we appeal to our readers to give liberal support to the fund. The secretary, the Rev. W. WILKS, sends, with the subscription list, the following letter:—"I am enclosing herewith the first list of contributions towards the Society's War Horticultural Relief Fund. So far the appeal has been made only to Fellows of the Society. A wider appeal to the public is to

* We are indebted to the Cambridge University Press for the use of the blocks from which figs. 48-50 are taken.

be made by a committee of ladies who have kindly come forward to help to promote the success of the Fund. They are now busy organising their work in order that when once it is put in motion it may go forward effectively. I would like to call your readers' attention to a little collecting card which the Society have had printed, which affords a simple means of glean- ing small amounts. I should be pleased to send one of the cards to any of your readers who would apply to me for it at the R.H.S. Office, Vincent Square, Westminster, S.W. As an instance of ways in which help can be forth- coming from those with only limited means, I have before me a letter enclosing 6s. and a prom- ise of three further donations of 5s each, to be sent monthly until the sum of one guinea is completed. This strikes me as a very nice example, which might be widely adopted, and I therefore cite it that others may follow."

near Surbiton. Mr. LYNE, who had been at Fox- bury in the service of the late H. F. TIARKS, Esq., for 25 years, has had a long and successful gardening career. He began work in the gar- dens at Grimsthorpe Castle, Lincolnshire, in 1856, at the early age of ten years. Seven years later he entered Messrs. LEE's Nursery at Ham- mersmith, thence going successively to Drake- lowe, Burton-on-Trent, Colworth Hall, Bed- fordshire, Messrs. VEITCH's Nursery at Chelsea, and Shipley Hall, Derby. In 1872 he became foreman at The Dell, Englefield Green, and sub- sequently head gardener at Belvedere, Wimble- don, where he remained until 1890. Having been known by Mr. TIARKS for some years, he was then engaged by him to go to Foxbury, where he carried out many improvements in the gardens and pleasure grounds. For many years Mr. LYNE has been an active member of the committee of the Royal Gardeners' Orphan Fund, giving it

vegetables and salads in substitution for meat (including bacon), and other articles of food which are very dear at the present time. The Association is affiliated to the Central Chamber of Agriculture, and is co-operating with other associations interested in the culture of British fruit and vegetables, the more extensive use of which is being encouraged by various means. The 87th annual general meeting of the Asso- ciation was held on the 12th ult., and the ac- counts for the year ended June, 1915, showed gratifying results.

R.H.S. PAMPHLETS.—The Royal Horticul- tural Society has lately published, through Messrs. W. WESLEY AND SON, 28, Essex Street, Strand, a series of eight pamphlets on various subjects connected with simple gardening. The first five deal with actual gardening operations, chiefly with a view to the needs of the cottage gardener or allotment holder; the last three deal



FIG. 49.—STIPULES AND LEAF OF DUKE OF ALBANY ROGUE, LEFT-HAND FIG., 14TH NODE; RIGHT HAND, TOP OF STEM.

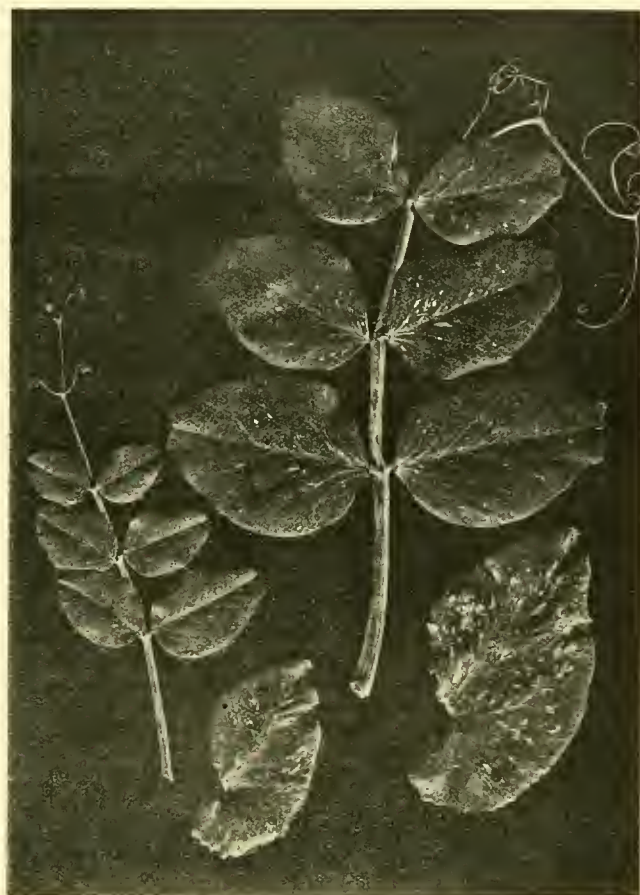


FIG. 50.—STIPULES AND LEAF (RIGHT HAND) AT 10TH NODE, DUKE OF ALBANY: DO. (LEFT HAND) AT TOP OF STEM.

RETIREMENT OF MR. WILLIAM STURROCK.—Mr. WILLIAM STURROCK, who has been for some time manager to Messrs. WM. LEARMONT AND SON, Larchfield Nurseries, Dumfries, has re- signed his position, and is leaving to take up fruit cultivation in Florida. Mr. STURROCK had won the general esteem of horticulturists in Dum- fries and elsewhere, who wish him every success in his new sphere of work. Mr. STURROCK has done much good work in connection with the Dumfries and District Horticultural Society, and also in the Dumfries and Galloway Gardeners' Association, of which he was one of the vice- presidents.

RETIREMENT OF MR. JOHN LYNE.—In con- sequence of ill-health Mr. JOHN LYNE will, in a few days, retire from the charge of the gardens at Foxbury, Chislehurst, and settle at Tolworth,

material financial assistance. Mr. LYNE will be succeeded at Foxbury by Mr. C. ENGLAND, gardener to F. C. TIARKS, Esq., at Woodheath, Chislehurst. Mr. LYNE's friends sincerely hope that a period of complete rest will restore him to his former state of good health.

PRESENTATION TO A GARDENER.—Mr. A. A. PETTIGREW, who has recently relinquished the position of head gardener to the EARL OF PLY- MOUTH at Hewell Grange, was last week pre- sented with a cabinet containing a set of silver and cutlery. The cabinet was inscribed: "Pre- sented to Mr. A. A. PETTIGREW by his many friends at Tardebigge, 1915." Mr. PETTIGREW is now chief officer of the Cardiff parks.

MARKET GARDENERS', NURSERYMEN'S, AND FARMERS' ASSOCIATION.—A movement has been recently inaugurated by this society with the object of increasing the consumption of fruit,

respectively with the bottling of fruits and vegetables, vegetable cookery, and the making of salads. The cultural matter in the gardening pamphlets is admirably clear and practical and meets a real need. The pamphlets which deal rather with cookery than with gardening will also prove a boon, especially at the present time, when the dearth of meat is turning the attention of the housewife more and more to the substitu- tion thereof of vegetables. If this timely advice does something to check wastefulness, it will by this alone justify the publication of the series. The price of each pamphlet is 2d.

VILLAGE WAR-FOOD SOCIETIES.—The Board of Agriculture and Fisheries has issued a leaf- let (Special Leaflet, No. 32) suggesting the formation of village societies which would per- form the function of regulating the production and consumption of food in the district. The

object of each society would be to ascertain the position of any land at present uncultivated and arrange for its co-operative and mutual cultivation, providing for the supply on favourable terms of all necessary materials. The society would also foster and encourage the keeping of stock, such as pigs, goats, poultry, rabbits, pigeons and bees, and would assist in the preservation of such products as eggs, honey and fruit which might not be immediately required. The collection of wild fruits, nuts and acorns could also be readily organised by such a society, and would add considerably to the available food supplies. Copies of the leaflet, and any other information required, can be obtained free of all charges from the Secretary, Board of Agriculture and Fisheries, Whitehall Place, London.

SUBURBAN VEGETABLE GARDENS.—We learn from the Willesden District Council that there is a large demand for allotments in that district, and the Council have had to provide a hundred fresh plots over and above the 1,200 already in existence. The increase in the demand for vegetable plots has been accompanied by a corresponding decrease in the requests for cricket and football pitches, which would seem to point to the substitution by the youths of Willesden of gardening for games.

TEMPLE GARDENS IN WAR-TIME.—Those who attended year after year the annual summer exhibition of the Royal Horticultural Society in the Temple Gardens (where it was always held until within recent years) will have viewed with concern the effects of the drilling which has taken place during the past year on the lawns. The holding of the flower show was always attended with slight unavoidable damage to the fresh greenness of the well-kept turf, but this was of short duration and easily remedied. Now, however, the trampling of heavy boots has completely destroyed the turf over large tracts of what was once smooth lawn, and has quite spoiled the appearance of that part of the gardens devoted to the training of soldiers. At any other time such wanton destruction of these beautiful gardens would have seemed an unpardonable vandalism; but when the sacrifice made by these soldiers is compared with the loss entailed by the desecration of the gardens this latter pales into insignificance.

WAR ITEMS.—M. ADNET, of Cap d'Antibes, whose name will always be associated with the Gerbera as the pioneer raiser of hybrids, has, we learn, met with an accident that nearly cost him his life. He has lost the use of his right arm, but notwithstanding this he has returned to service and is a captain instructor at the depot of the 111th Regiment of Infantry.

—M. HENRI CHATENAY, who exhibited Carnations in the French Section at the Royal International Horticultural Show at Chelsea in 1912, is instructor at the motor-car depot at Boulogne-sur-Seine.

—M. LUCIEN CHARLES BALTET, son of the late M. CHARLES BALTET, the eminent pomologist of Troyes, is a lieutenant in a squadron of Territorial Cavalry.

—M. LUCIEN CHAURÉ, editor of the *Moniteur d'Horticulture* of Paris, is, notwithstanding his advanced age, actively engaged in the service of his country. M. CHAURÉ is an old soldier of many years' standing, having had experience in the war of 1870.

—*L'Horticulture Française* gives the names of sixteen members of the firm of Messrs. BARBIER, Orleans, who have been wounded in the war.

—M. GIRAULT, nurseryman and market gardener, of Orleans, has suffered the loss of three of his sons, who have been killed or died of typhoid fever at the front. He has still two other sons on active service at the seat of war.

—Latest advices from Paris inform us that M. HENRI MARTINET, the editor-in-chief of *Le Jardin*, is still without any news concerning his son. It will be remembered that young M. MARTINET, who was a corporal in a line regiment, left the French lines with his comrades in an attack on the German trenches, and was reported as missing after the fight. M. MARTINET has the deep sympathy of his English friends in his great anxiety.

—We regret to learn that Mr. DOUGLAS A. SINCLAIR has been wounded at the Dardanelles—we trust not severely. He was a nephew of the late Mr. SINCLAIR, who held a responsible position in the firm of Messrs. JAS. VEITCH AND SONS. Some three years ago Mr. SINCLAIR went to Borneo to collect Orchids for the Hon. N. CHAS. ROTHSCHILD and Sir MARCUS SAMUEL. Later he emigrated, and ultimately found himself in the ranks of a Colonial battalion at the Dardanelles.

FLOWERS IN SEASON.—We have received from Messrs. KELWAY AND SON, of Langport, Somerset, several very fine specimens of their latest strains of Gladioli. The blooms are of particularly good size, borne on stout, erect stems, and give every evidence of careful selection and good culture. Colonel Dennis Boles is a deep rose variety, blotched with cream. White Lady is of a beautiful creamy-white, the inside of the petals touched with soft lemon colour. Sir Oliver Lodge is a deep salmon-rose variety, the colour deepening to crimson inside the lower petals. Gordon Selfridge is a brilliant flower, almost vermilion in colour, with a crimson streak down the interior of each petal. Autumn Beauty is of a warm crimson, streaked with white; and Golden Measure is a lemon variety, with a crimson touch inside the petals.

BOTANICAL MAGAZINE.—The August number of the *Botanical Magazine* contains descriptions and illustrations of the following plants:—

ALPINIA MUTICA, tab. 8,621.—This was obtained by ROXBURGH from Penang in 1810, and cultivated in the East India Company's botanic garden at Calcutta, where it flowered freely during the greater part of the year, and particularly in the hot weather. It was also introduced into Europe at about the same time, for it is mentioned by SALISBURY in 1812 as flowering in Bayswater, at the house of the Comtesse DE VANDER. Later it seems to have disappeared from cultivation in Britain. The *A. mutica* figured in tab. 6,908 of the *Botanical Magazine* is erroneously so described, and the error has unfortunately crept into many horticultural lists. The true plant was reintroduced by Mr. H. N. RIDLEY, who sent the plant from which the present plate has been prepared from Singapore to Kew. It has done well in a tropical house, and flowered for the first time in July, 1914. It is a perennial herb, with stems 6 to 8 feet high. The leaves are long and narrow, usually measuring 1 to 2 feet, by a couple of inches wide. The calyx is white, tipped with pale pink, and the petals are white. The lip is a deep yellow, spotted and lined with bright red.

RHODODENDRON SOULIEI, tab. 8,622.—This Rhododendron (figured in *Gard. Chron.*, 1909, Vol. XLV., supp. facing p. 380, and p. 381, fig. 167) comes from Western China, and occurs abundantly in Western Szechuan, near Tachien-lu, at about 12,000 feet above sea level. The plant here represented was raised from seed collected in 1903 by Mr. E. H. WILSON when travelling on behalf of Professor SARGENT, of the Arnold Arboretum, by whom the seeds were presented to Kew. R. Souliei is one of the most distinct of the new Chinese Rhododendrons, and may be easily recognised by its long-petioled wide-based leaves, well-defined calyx lobes edged with red glands, and flat, saucer-shaped flowers. It is of low, bushy habit, and thrives well in a somewhat shady position.

CORYLUS MANDSHURICA, tab. 8,623.—The Hazel here figured is a native of Eastern Asia. It is closely allied to the Eastern North American *C. rostrata*, but the leaves are broader and often lobed in the upper part. *C. mandshurica* is common in mountainous districts in Eastern Manchuria and forms dense thickets. It was first collected by MAXIMOWICZ near the Amur River in 1855, but it was only introduced to Kew in 1882 by the late Dr. E. BRETSCHNEIDER, and it is from one of the plants raised from this seed that the material for the present illustration was derived. It forms a bush about 5 feet in height. It is very hardy, but it may be observed that the best and most abundant crop produced was that of 1912, following the abnormally hot summer of 1911.

SENECIO GLASTIFOLIUS, tab. 8,624.—This Senecio is a native of South Africa, where it occurs throughout the coast region from Riversdale to Algoa Bay. The plant which forms the subject of the illustration was presented to Kew in 1913 by Mr. H. RABJOHN, Twicken, Holland, and flowered in a greenhouse in April, 1914. It is a perennial and easily cultivated. It can be readily propagated by cuttings. It forms a neat, upright plant, about 4 feet high, and flowers during April and May; it may be considered hardy, but will succumb if the thermometer falls to 15° of frost. The ray florets are a clear rose-lilac, and the disc-florets yellow. A full-page illustration of this plant was given in *Gard. Chron.*, 1910, Vol. XLVIII., and a note accompanying the plate (p. 43 *loc. cit.*) records that *S. glastifolius* was raised by Messrs. SUTTON AND SONS from seed received from the district of George, immediately to the east of Riversdale.

THE CONTROL OF WHITE FLY AND SOFT SCALE.

TWO USEFUL PARASITES.

In August, 1914, the Figs in the R.H.S. Gardens, Wisley, were found to be suffering from Soft Scale (*Lecanium hesperidum*), and, as no parasites were found, scale infested with a parasite was introduced from elsewhere and the parasite established. The parasite did good work before the leaves fell, and this year the scale, while present in small quantity, is practically negligible. During the next few weeks it will be possible to send material infested with the parasite which destroys Soft Scale to those who have Figs or other plants infested with this scale. Soft Scale is a common greenhouse pest, and it is worth while introducing its parasite as a means of controlling the pest.

For over two years White Fly has been grown under control, and quite recently a very valuable check on it has appeared in the form of a parasite which destroys the scale stage. This parasite is multiplying rapidly at Wisley, and material is available for distribution to any greenhouse that is infested. All that is required to be done in order to establish the parasite in a house in which White Fly occurs is to open the parcel of infected leaves which will be sent, in the greenhouse, and to leave it there for some days.

In both cases, the parasite is a very useful check on the increase of the insect it attacks, and where soft scale or white fly occurs, these parasites should be established. Particularly is this so with the White Fly parasite. White Fly is a troublesome enemy to Tomatoes. Up to the present, no parasite destructive of this pest has been known in Great Britain, and we are anxious to establish this one in as many places as possible besides Wisley.

Those interested are requested to write to the Director at the Wisley Gardens. H. M. Lefroy.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLIII).

L'APPROVISIONNEMENT DES PRODUITS HORTICOLES EN ANGLETERRE ET LA GUERRE.

(Suite de la p. 140.)

LES envois de l'île de Madère ont souffert énormément. Les Haricots, dont elle fait de grandes fournitures à l'Angleterre au printemps, ont souvent subi des retards et sont arrivés en mauvais état. Grâce à cette circonstance, les producteurs des îles de la Manche qui leur disputent le marché de Londres ont fait de bonnes affaires, leur trafic n'étant guère contrarié. Il en fut de même pour les Tomates hâtives, les expéditeurs des îles Canaries qui approvisionnent le marché en hiver ayant rencontré des difficultés pour assurer les arrivages normaux.

En ce qui concerne les envois du Cap, le service de la Compagnie "Union Castle Line," qui amène les Pêches, Prunes, Poires et Raisins de Capetown à Southampton, n'a pas subi d'interruption, mais les exigences de la marine de guerre ayant nécessité le transfert du port d'attache à Londres, il s'est produit de légers retards sans influence sur le marché de fruits emballés et expédiés dans d'aussi bonnes conditions que ceux du Cap. L'approvisionnement fut cependant moindre, les expéditeurs craignant la crise; il en résulta des prix exceptionnels.

Plus tard sont survenus les fruits d'Australie qui se sont écoulés normalement. Il est néanmoins probable que les expéditeurs auront subi des pertes, vu la difficulté de trouver place à bord des transatlantiques. De plus, le débouché allemand qui reçoit directement des quantités considérables de produits australiens, fut supprimé dès le début de la guerre.

En ce qui concerne les Oranges, les retards ont agi défavorablement sur le marché. De nombreuses cargaisons ont dû se vendre à la hâte, leur condition étant mauvaise. L'industrie du triage des Oranges par les colporteurs a été très rémunératrice. On sait qu'une couple d'Oranges gâtées dans une caisse enlève à celle-ci toute valeur commerciale, parce qu'au bout de très peu de temps toute la caisse entre en décomposition. Les colporteurs le savent et rodent autour des magasins. A prix très bas ils font un gros achat, trient immédiatement et quelques instants après, la charrette remplie hier de Bananes, ou de Pommes, est chargée d'Oranges à un penny, deux et parfois même trois pour un penny selon les dimensions ou selon le voisinage plus ou moins immédiat dans lequel elles se trouvaient avec les fruits décomposés.

Les producteurs anglais, de leur côté, n'auront pas à se plaindre. Tout petit accroissement dans les arrivages étrangers a fait sentir une influence favorable sur leurs transactions. Les considérations relatives à l'influence de la crise économique sur le marché des fruits et légumes ne s'appliquent d'ailleurs pas à ce pays, la crise n'y existant pas dans les classes populaires. Les compartiments réservés à ces produits dans Covent Garden ne paraissent pas avoir souffert; ils sont tout aussi encombrés et animés qu'en temps de paix. Les primeurs, Fraises, Raisins, Pêches, ont maintenu de bons prix, même en plein hiver; actuellement encore le cours des fruits de serre est au moins aussi favorable que les années précédentes à la même époque, car la production indigène (Environs de Londres, côte méridionale et îles de Jersey et de Guernesey) est seule maîtresse de la place, les Belges se trouvant dans l'impossibilité de faire leurs importants envois. Une chose curieuse est la prospérité des producteurs de Concombres. Normalement ceux-

ci font d'importantes expéditions en Allemagne et on s'attendait donc à la débâcle: le contraire s'est produit.

Les fruits mous ont été exceptionnellement chers. On estime que la récolte des Groseilles à maquereau et cassis n'a pas été très abondante, la première à cause de l'oïdium américain qui malgré tout continue ses ravages, la seconde à cause du grossissement des bourgeons qui fait avorter les fleurs. D'un autre côté, les envois de Hollande ont été réduits, toujours à cause de la facilité avec laquelle on les écoulait en Allemagne. Il n'en est pas moins vrai que la demande a été extrêmement vive, beaucoup de gens désirant faire des conserves. Les nombreuses usines ont fait des achats importants pour leur permettre d'exécuter les ordres reçus ou attendus des services de l'Intendance des armées alliées. La Groseille cassis a, dans ces conditions, couramment assuré un prix de soixante centimes la livre.

La récolte sur pied des Pommes et Poires est très importante. Dans certains districts on déclare même ne pas se rappeler une abondance de Poires comme cette année. Déjà des quantités de Pommes se sont écoulées, surtout pour la compote, car de nombreux envois étaient loin d'être mûrs, ce qui confirme l'intensité de la demande, et ce n'est guère que maintenant que les fruits mûrs, tels que Lady Sudeley, se font plus abondants. Les Prunes pour lesquelles les rendements ne paraissent pas mauvais, envahissent également de nombreux carreaux au marché et assurent de l'occupation dans nombre de fabriques de conserves où la demande était à nouveau telle qu'on trouve impossible d'attendre la pleine maturité pour commencer les travaux.

En ce moment, on prévoit une bonne demande de légumes pour l'automne et l'hiver. Aussi les conseils pour les semis tardifs se succèdent et nul doute que de nombreux maraîchers ne disposent d'une bonne quantité de produits à la fin de l'année: le déficit éventuel dans les envois des légumes de l'étranger sera, de cette façon, comblé par l'augmentation de la production indigène.

NOUVELLES DIVERSES.

HARICOTS GÉANTS.—Au meeting horticole tenu mardi dernier au Royal Horticultural Hall, MM. Sutton, de Reading, exposaient des Haricots Best of All dont les gousses atteignaient 40 centimètres de longueur. De vrais légumes de guerre!

AU CHAMP D'HONNEUR.—On annonce la mort, d'un éclat de shrapnell au cours d'une reconnaissance aux environs de Ramscapelle, de M. Ledoux, ingénieur agricole, chef du personnel de la Forestière et Commerciale du Congo au lac Leopold II. M. Ledoux, qui faisait autrefois partie du personnel du Jardin Botanique de l'Etat Indépendant du Congo, avait été à Namur et à Anvers avant de prendre part à la défense de l'Yser. Il avait reçu la croix de St. Georges.

LES HOUBLONS EN BELGIQUE.—En temps normal la cueillette des Houblons dans la région de Poperinghe exige l'aide d'environ 8,000 travailleurs supplémentaires, recrutés dans la partie de la Flandre occupée par l'ennemi. Pour éviter que la récolte ne soit détruite, l'état-major vient de décider que les soldats belges, originaires de la région houblonnière et faisant partie des Compagnies de Travailleurs, pourront obtenir un congé de quatorze jours en vue d'aider à la cueillette. Cette mesure intéresse onze localités de la Belgique non

occupée. En 1914, l'étendue consacrée à la culture du Houblon dans la région de Poperinghe était de 1,533 hectares 11 ares, en augmentation sensible sur 1910, lorsque 1,064 hectares seulement étaient recensés. Le rendement moyen était de 2,000 kilos, donnant un total de 3,066,000 kilos. Depuis l'année dernière beaucoup de champs sont régulièrement labourés par les obus et l'étendue qu'on a pu maintenir en culture n'est pas supérieure à 500 ou 600 hectares. Le rendement prévu étant de 1,500 kilos à l'hectare, la récolte produira 750,000 à 900,000 kilos de Houblon.

CRÉDIT HORTICOLE EN FLANDRE.—Un comité s'est constitué à Gand en vue d'accorder du crédit aux horticulteurs. Par son intervention, des prêts ont été obtenus au taux réduit de 4 pour cent. Des traites et des factures ont également été payées. De plus à la suite de la constitution du comité, des horticulteurs qui, se basant sur le moratorium, refusaient de rien payer, ont accepté des traites, d'autres, le plus grand nombre, ont payé des acomptes.

FRAUDES DANS LE COMMERCE DES ENGRAIS EN BELGIQUE.—La falsification des engrais est très lucrative en Belgique par suite de la rareté des produits. Du guano vendu 29 fr. les 100 kilos valait en réalité 2 fr. 50. Du purin desséché dosant moins de 2 pour cent d'azote est vendu 11 fr., du guano à 3 ou 4 pour cent, 30 à 34 fr., des engrais potassiques accusant à l'analyse une richesse de 3 à 4 pour cent de potasse, 27 à 30 fr. Des comités de défense contre ces fraudes ont été créés.

L'EXPORTATION DE LÉGUMES HOLLANDAIS.—Un arrêté royal du 18 août interdit l'exportation de Choux-blancs et de Haricots, sauf exceptions à déterminer par le Ministre de l'Agriculture. Un arrêté ministériel du 21 août lève l'interdiction et charge le secrétaire du Conseil horticole néerlandais de délivrer les "permis" d'exportation, mais seulement aux personnes qui s'occupaient déjà de ce commerce avant le 31 juillet, 1914. Pour les Choux-blancs aucune restriction n'est mise à l'exportation, mais en ce qui concerne certaines catégories de Haricots, pour chaque exportation de 100 kilos, cinquante kilos doivent être fournis à la consommation intérieure, à un prix fixé d'avance.

KORT OVERZICHT VOOR DE VLAMINGEN.

HEEL wonder is het dat, niettegenstaande d'n oorlog, de engelsche handel in keusvruchten zoo levendig bleef. Komkommers maakten loonende prijzen alhoewel de gewone uitvoer naar Duitschland geen plaats kon hebben. Druiven zijn duurder omdat geen belgische op de markt komen.

De Hopvelden rond Poperinghe zijn van 1,500 hectaren op ongeveer 500 gevallen daar vele in de vuurlijn liggen. Aan de soldaten der betrokken gemeenten worden thans verloven gegeven om in het plukken te helpen.

Rond Gent is eene vereeniging gesticht die tijdens den oorlog, krediet verschaft aan de tuinbouwers.

In België is buitengewoon bedrog door kooplieden in kunstvette gepleegd. 'T bracht veel op daar de scheikundige mesten zoo duur waren.

Uit Holland mogen witte koolen en boonen slechts door bekende handelaars naar 't buitenland gevoerd worden en mits te gelijker tijd een deel, aan op voorhand bepaalden prijs, voor het inlandsch gebruik over te laten.

R.H.S. WAR HORTICULTURAL RELIEF FUND.

LIST OF DONATIONS UP TO AUGUST 26, 1915.

Patrons:

His Majesty the King.

Her Majesty the Queen.

Her Majesty Queen Alexandra.

His Imperial Majesty the Emperor of Russia.

Her Imperial Majesty the Empress of Russia.

His Majesty the King of the Belgians.

Her Majesty the Queen of the Belgians.

The President of the French Republic.

The Prince Regent of Serbia.

	£	s.	d.
His Majesty the King	100	0	0
Royal Horticultural Society (first donation)	1,000	0	0

	£	s.	d.
"A."	0	5	0
Abernethy	0	5	0
Acland, Beatrice D.	2	2	0
Adam, Mrs. A. C.	3	3	0
Adams, Mrs. S. F.	3	3	0
Adams, Miss B. C.	1	1	0
Adlard, Mr. and Mrs. Edward	5	0	0
Agricultural Dept., Cairo	22	0	0
Airedale, Lady Laura	1	1	0
Aitchison, Mrs.	0	10	0
Akroyd, Miss E.	1	0	0
Alderman, A.	0	2	6
Aldrich, Mrs.	2	2	0
Aldridge, Mrs. C. H.	2	2	0
Alexander, J.	5	0	0
Alland, Hon. Mrs.	2	2	0
Allan, Janie	1	2	0
Allan, W.	2	2	0
Allen, A. C.	3	3	0
Allen, Mrs. B. W.	1	1	0
Anderson, E. J.	0	10	0
Anderson, Mrs. W.	1	1	0
Arghuath, Mrs.	5	0	0
Arnold, Mrs.	5	0	0
Arkwright, Godfrey E. P.	2	2	0
Arkwright, Walter G.	1	1	0
Arthur, Mrs. A.	20	0	0
Aischer, S. G.	10	0	0
Ashburnham, Lady	1	0	0
Ashwell, Miss Phyllis	0	3	0
Asser, S. B. Y.	5	0	0
Aston, Miss E.	2	2	0
Atkinson and Stat- ter, Messrs.	1	1	0
Awdry, Miss A. E.	0	5	0
Bacchus, W. W.	1	1	0
Bailey, Mrs.	1	1	0
Bailey, Mrs. O. H.	2	2	0
Balfour, Capt. C. B.	5	0	0
Balgarnie, Mrs. A. B.	1	1	0
Ball, Lt.-Col. E.	5	0	0
Barbour, Miss G.	2	2	0
Barlow, Mrs. F.	1	1	0
Pratt	1	1	0
Barlow, C. J.	1	1	0
Barnard, Lord	5	0	0
Barry, R. M. Atter	0	10	0
Barton, J.	2	2	0
Bartrum, Mrs. D.	1	0	0
Battersea, Lady	2	0	0
Baxter, Miss B.	1	0	0
Bayley, Miss M.	5	0	0
Beaumont, Duchess of	1	0	0
Beaumont, Somerset	20	0	0
Beck, Mrs. C. J.	1	1	0
Beckett, E.	1	1	0
Beddington, H.	1	1	0
Beddome, Mrs. R. H.	3	0	0
Benjamin, Mrs. J.	1	1	0
Bennett, Mrs. F. W.	2	2	0
Bennett, Mrs. R.	1	0	0
Benson, Mrs. R.	10	0	0
Beutack, Lady Henry	15	0	0
Bentley, Mrs. D. K.	1	0	0
Berkeley, Mrs.	1	1	0
Bertram, Miss M.	1	0	0
Bevington, Miss K.	5	0	0
Bigge, Miss J. C.	0	12	0
Bilney, W. A.	5	0	0
Birkbeck, Mrs. E.	5	0	0
Birt, Miss A.	2	2	0
Bischoffheim, Mrs.	50	0	0
Bishop, Mrs. E. W.	2	2	0
Blackburn, H. R.	5	0	0
Blades, G. R.	5	5	0
Blenkinsop, A. (Col- lection)	8	6	0
Blom, Walter	1	0	0
Boake, A.	5	0	0
Boardman, Mrs. E.	1	0	0
H.	1	0	0
Boltho, Mrs. Robins	1	0	0
Bond, F.	1	0	0

	£	s.	d.
Corbet, Hon. Mrs.	1	0	0
Corderoy, Mr. and Mrs. G.	1	1	0
Cory, Reginald	150	0	0
Corry and Co.	1	1	0
Cotton-Jodrell, Col.	5	0	0
Cox, G.	1	1	0
Cranbrook, Cicely	1	0	0
Countess of	1	0	0
Crewle, Lady	3	3	0
Cripps, Reginald	1	0	0
Croft, Mrs. T. J.	0	2	6
Cross, Arthur	1	1	0
Crowfoot, Wm.	1	1	0
Currey, Mrs. C. H.	2	2	0
Currey, Miss F. E.	0	10	0
Curtis, Rev. F.	0	10	0
Cuthbertson, J. G.	5	5	0
Dangar, Mrs. D. R.	2	2	0
Darwin, Hon. Mrs. H.	5	0	0
Davidson, A. G.	1	1	0
Davie, Miss A. F.	1	1	0
Davis, Miss M. J.	1	1	0
Davison, Miss L.	1	1	0
Dean, Mrs. A.	10	0	0
De Chaumont, Mrs. F.	0	2	6
Denison, Mrs. H.	0	10	0
Dent, Mrs. O. H.	1	1	0
Devenham, Mrs. E. R.	5	0	0
Dew, Mrs. Walter F.	0	10	0
Dickson, Brown & Ben	5	0	0
Digby, Rev. C. T.	2	2	0
Dixon, C. L.	2	0	0
Dobbie & Co.	50	0	0
Dollar, Mrs. Peter	1	1	0
Donner, Lady	5	0	0
Dore, Mrs.	1	0	0
Dorrien - Smith, Major A. A.	5	0	0
Dorrien - Smith, T. A.	5	5	0
Douglas, Pennant, Hon. May	2	0	0
Dow, F. M.	1	0	0
Down, E. T.	1	0	0
Downing, Miss	0	10	0
Du Buisson, A. E.	1	1	0
Ducie, The Earl of	25	0	0
Du Forest, Mrs. J. L.	2	0	0
Dugdale, Miss R. E.	2	2	0
Dugdale, Mrs. Lionel	1	0	0
Dugdale, Mrs. James	5	0	0
Du Plat, A. B.	0	10	0
Durrell, Miss D.	0	2	6
Dysart, Earl of	25	0	0
Eddy, Misses	3	3	0
Edgell, Herbert	2	0	0
Edgerley, Sir T.	2	2	0
Edwards, Mrs. James	1	0	0
Eland, Rev. Thomas	2	2	0
Eland, Mrs.	2	2	0
Elliot, John	1	1	0
Ellison, Mrs. Alice	3	0	0
Elton, Mrs. A. G. G.	1	0	0
Elwes, H. J.	5	0	0
E. M. N.	0	2	6
Engleheart, Miss M.	5	5	0
Everett, Miss H. C.	1	0	0
Ezelea	10	0	0
Eyres, Mrs.	1	0	0
Fair, Mrs. Arthur	3	3	0
Fairbank, C. B.	1	1	0
Falmouth, Viscountess	2	2	0
Fenwick, Mark	3	3	0
Fisher, Miss E. M.	2	2	0
Fletcher, R. Warne- ford	1	1	0
Fletcher, Mrs. Phyllis A.	1	1	0
Fletcher, Sir L. A.	5	0	0
F. M. W.	1	1	0
Fortescue, Mrs. J. B.	10	0	0
Foster, R. J.	10	0	0
Fotheringham, Miss A. N.	0	10	0
Foulerton, Miss L. A.	5	0	0
Fowler, J. Gurney	100	0	0
Francis, Mrs.	0	10	0
Friend, Mrs. James	1	0	0
Friend, A.	1	0	0
Fromow & Sons	5	0	0
Gamble, J. Sykes	5	0	0
Gardener, A.	0	5	0
"Gardeners' Chronicle"	100	0	0
Gardner, John	5	0	0
Garside, Miss B.	2	0	0
Gaseley, Lady	1	0	0
George, Mrs. Mary	5	0	0
Gibbs, Archdeacon the Hon. K. F.	2	0	0
Gleadow, Miss M. C.	1	0	0
Glover, Dr. W.	0	10	0
Kenit	0	10	0
Godlee, J. Lister	2	2	0

	£	s.	d.
Goodhart, Mrs. A. M.	5	0	0
Gordon, Mrs. E.	0	10	0
Gould, Mrs. E. B.	1	0	0
Grainger, J.	0	5	0
Grant, W. H.	1	1	0
Gray, Mrs. W. E.	2	0	0
Gray, The Misses	3	3	0
Green, Mrs. C. H.	0	10	0
Greg, Miss M. S.	0	10	0
Grenfell, The Right Hon. Lord	5	0	0
Grosvenor, The Countess	0	5	0
Guildford, Miss S.	1	0	0
Gulland, Miss J. K.	1	0	0
Gutteridge, Michael	0	10	0
Hadden, Maj.-Gen. Sir Chas. F.	3	17	6
Hale, Miss H.	1	0	0
Hall, Mrs. W. G.	1	1	0
Hamilton, Mary	5	0	0
Hampson, Mrs. H. D.	10	0	0
Hampstead	1	0	0
Hanbury, Cecil	10	10	0
Hargreaves, Mrs.	1	0	0
Harmer, F. A.	2	0	0
Harris, Mrs. G.	1	1	0
Harris, James, & Sons	5	0	0
Harrison, T. Fen- wick	50	0	0
Harrison, L. A.	3	0	0
Hawker, Capt. H. G.	2	2	0
Hay, Mrs. Charles	2	0	0
Hay, Mrs. Walter R.	2	2	0
Hay, Mrs. A. S.	1	1	0
Hayhurst, Miss A.	1	1	0
Haywards Heath & Sussex Horti- cultural Society	110	0	0
Hazelton, E. F.	1	0	0
Heape, Chas.	1	0	0
Hearne, Miss L.	0	10	0
Henage, Lady	10	10	0
Henderson, Mrs.	1	0	0
Henderson, Mrs. M. E. (on behalf of Mrs. Paul Turner)	0	10	0
Henderson, Mrs. R. S.	1	1	0
Heary, Miss Agnes	0	2	6
Henslow, Rev. Prof. C.	5	0	0
Henty, Miss M. A.	3	3	0
Herbert, Lady Mary	5	0	0
Herring, L. K.	0	10	0
Hewitt, Lady	1	1	0
Hewitt, Wm. W.	5	5	0
Heygate, C. B.	2	2	0
Hilder, Mrs. F.	0	10	6
Hillier & Sons	1	1	0
Hillyer, Mrs. W. H.	1	1	0
Hinde, Mrs. Edith	1	0	0
Hitchings, C. H.	0	5	0
Hoare, Mrs. Rolls	5	0	0
Hobby, Mrs. Mr. and Son	1	1	0
Hodgson, M.	5	5	0
Holdsworth, Alice	10	0	0
Hole, Mrs. H.	5	0	0
Holford, Sir Geo.	50	0	0
Holmes, M. G.	1	1	0
Holmes, G. T.	1	1	0
Holroyd, Lady	1	0	0
Hopkins, Mrs.	1	0	0
Hopkins, Mrs.	2	0	0
Horlick, Sir James	5	0	0
Horticultural Club, The	50	0	0
Hoseason, E. M.	1	1	0
Hotchkin, Mrs. and Miss Staniland	0	10	0
Howell, Mrs.	2	2	0
Hoyland, E. Doug- las	1	1	0
Hytle, Miss	25	0	0
H. S.	0	2	0
Hubbard, Miss E.	1	1	0
Hulton, Lady Mar- garet	1	0	0
Humphrey, Frank	2	2	0
Humphries, Sydney	5	5	0
Hunt, Mrs. Warwick	5	5	0
Hunter, Robert S.	1	1	0
Hurst & Son	100	0	0
Hutchins, Sir P.	5	0	0
Illingworth, Mrs. Harry	5	0	0
In Memoriam (Miss Annie Wilson)	1	1	0
Ingram, Miss E. M.	1	0	0
Ingram, G. J.	2	2	0
Ireland, S.	0	10	6
Jackson, W. C.	2	2	0
James, Mrs.	1	0	0
James, Mrs. J. H.	2	2	0
Jarvis, Miss M.	1	0	0
Jefferson, F. T.	10	0	0
Jeffreys, J.	1	1	0
Jennings, Mrs. Thomas	2	2	0
Jevons, G. Walter	2	2	0

Johnson, Mrs. E. W.	2	2	0	Meinertzhagen, Miss				£ s. d.
Johnson, Mrs. Stanley	0	10	6	B. A.				2 0 0
Jones, E. Marsden	2	2	0	Mellersh, R. E.				1 1 0
Jones, H. C.	2	2	0	Mellor, Lady				1 0 0
Jones, R. P.	5	0	0	Melville, A. S.				
Kearoe, Miss L.	0	10	6	Leslie				5 0 0
Keeble, F.R.S., Dr.	21	0	0	Melville, A. H.				
Kelly, Rev. E. C.	0	2	0	Leslie				3 3 0
Kelvin, Lady	10	0	0	Menzies of Menzies,				
Kemble, Mrs. H. W.	1	0	0	Miss				0 10 0
Kendall, Miss L. M.	1	0	0	Menzies, W. D.				
Kersey, Mrs. C. J.	5	0	0	Graham				10 10 0
Kessler, Mrs. G. A.	1	1	0	Merton, Mrs. A. R.				50 0 0
Khor, E. J.	3	3	0	Metcalf, W. P.				10 10 0
Kingsburg, Mrs.	0	10	0	Miller, Mrs.				1 0 0
Kinnear, Mrs.	1	1	0	Millet, Mrs. F. D.				1 0 0
Kirchner, G. G.	1	1	0	Mitchell, F. W. V.				3 0 0
Kirkby, Mrs.	3	3	0	Mitchell, W. E.				2 2 0
Klein, Mrs. H.	0	10	6	Montague, C. E.				2 2 0
Klingenstein, W.	2	2	0	Montague, Miss M.				0 10 0
Knappe, J. W.	0	4	0	Montgomery, Mrs.				
Krabbe, Mrs. C. H.	5	0	0	Mary				1 0 0
Lafone, Mrs. Harriet	5	0	0	Montizambert, Miss				
Lake, Chas.	2	2	0	E. C.				1 1 0
Landale, Mrs. A. K.	10	0	0	Moore, Mrs. Richard				5 0 0
Lane, S. H.	5	5	0	Moore, Mrs. J. H.				1 1 0
Lane, William	1	1	0	Moore, G. F.				5 5 0
Lane, Col. C. T.	1	1	0	Morecam, Miss M. W.				6 0 0
Lang, Major E. A.	3	0	0	Moreland, Harold.				5 0 0
Lansell, F.	1	1	0	Morris, Sir Daniel.				5 0 0
Lascelles, Rev. Edwin, and Mrs.	2	2	0	Morris, Sidney				10 0 0
Lascelles, Hon. Gerald	2	2	0	Morrisso-Bell, Mrs.				
Law, Hon. Mrs. A.	5	5	0	M. E.				2 2 0
Lawrence, Mrs.	3	3	0	Mortimer, Alex.				10 10 0
Lawrence, C. W.	2	2	0	Mortimer, Mrs.				
Lawrence, Lady	25	0	0	H. P.				5 0 0
Laxton, Bros.	5	5	0	Morton, A. H.				1 0 0
Leach, Herbert P.	10	0	0	Muir, Miss C. F.				2 0 0
Leggett, Mrs. J. M.	1	0	0	Mundy, Miss E.				1 0 0
Legre, Lady Octavia	1	0	0	Murison, J.				0 5 0
Leslie, Miss	5	0	0	Murland, Mrs.				1 0 0
Lewissham and District Horticultural Society	5	5	0	Murray, Miss E.				1 1 0
L. H.	5	0	0	M. V. B.				5 0 0
Lidderdale, Miss C.	1	1	0	Myers, J. J.				2 2 0
Lindley, Miss Julia	10	10	0	National Rose Society				2 0 0
Link, Frederick	2	2	0	Neale, G. H.				0 10 0
Llewellyn, Sir John	25	0	0	Needham, Sir F.				10 0 0
Lloyd, Frank	25	0	0	Neel, The Hon.				
Lloyd, Mrs. H.	0	5	0	Lady				3 3 0
Lobb, Miss A. C.	1	0	0	Nevill, Mrs. Maude				0 10 0
Lockwood, Rt. Hon. Col.	21	0	0	Newberry, Miss				
Loder, Sir E.	50	0	0	F. L.				15 0 0
Logan, Mrs.	1	0	0	Niblett, Mrs. A.				1 1 0
Longfield, R. E.	1	0	0	Nicholson, Miss				
Longhead, Mrs. S. F.	1	0	0	R. S.				1 1 0
Longster, Harold	1	0	0	Nicholl, Miss E.				1 0 0
Loreburn, Countess of	5	0	0	Nicholls, Mrs.				
Loweandler, Mrs. F.	1	0	0	Aubitt				2 0 0
Lucas, Mrs. A. G.	1	1	0	Nicholson, Lady				5 0 0
Luft, Mrs. A. P.	1	0	0	Nix, John A.				10 0 0
Lugard, Mrs. E. J.	0	10	0	Nix, Chas. G. A.				6 0 0
Lusington, Miss S.	1	0	0	Norfolk, Duchess of				5 0 0
Luxford, Mrs. Robertson	1	1	0	Norris, Mrs. R.				3 3 0
Luxmore, H. E.	2	0	0	Notley, R. A.				1 0 0
Lyall, The Misses.	2	2	0	Ogden, Mrs.				10 0 0
Lyell, Mrs.	1	1	0	Ogilvie, Dr.				10 0 0
Lynch, R. Irwin	0	10	0	Ogilvy, Mrs. Frank				1 0 0
Mac	0	2	0	Oliver, Col. H. D.				1 1 0
MacAndrew, John	10	0	0	Oliver, Dr. and Mrs.				
MacConnell, Mrs. James	2	2	0	George				5 0 0
MacConnell, Mrs.	1	1	0	Onslow, Miss E. H.				2 2 0
MacConnell, Dr. W.	1	1	0	Oppen, Mary				1 0 0
Campbell	1	0	0	Osborne, Mrs. P. H.				1 0 0
McFarlane, W.	5	0	0	Oxenden, Miss M.				0 10 0
McKinnon, Mrs. J.	10	0	0	Oxley, Mrs. R. S.				1 1 0
McLagan, A. G.	5	0	0	Packe, Miss G. F.				5 0 0
McLagan, Lady	5	5	0	Paget, Mrs. Wellesley				
Madeley, Mrs. C.	1	0	0	Jey				0 10 0
Maitland, W. J.	1	0	0	Paget, Miss L.				5 0 0
Malcolm of Poltalloch, Col.	1	0	0	Paimet, Wm.				1 1 0
Malmesley, B.	10	0	0	Parsons, A.				2 2 0
Mangles, Miss C.	1	0	0	Parsons, H.				0 5 0
Mansfield, Hon. John	1	1	0	Parsons, Mrs. C.				1 0 0
Manvell, G. S.	1	0	0	Partridge, C. F.				1 1 0
Marham, H.	2	2	0	Pattinson, Mrs.				
Marriott, Miss D. O.	1	1	0	H. L.				2 0 0
Smith	1	1	0	Paul, Mrs. Herbert				1 1 0
Marshall, Leonard	2	2	0	Payne, Miss A. L.				2 0 0
Marshall, Rev. H. I.	2	2	0	Paynter, Walter A.				2 2 0
Marshall, C. Campbell	1	0	0	Peace, G. H.				2 2 0
Martin, H. J.	2	0	0	Peacock, Mrs. W. L.				0 10 0
Martin, Henry	0	5	0	Peake, Mrs.				0 10 0
Martineau, Sarah E.	2	2	0	Pears, Miss M. M.				1 1 0
Mason, Mrs. Walter	1	0	0	Pearson, R. Harper				5 5 0
Messie, Mrs.	5	0	0	Pearson & Sons				10 0 0
Maud, Miss M.	1	0	0	Pearson, A. H.				5 0 0
Mauhsell, Edith, Mrs.	2	2	0	Pearson, C. E.				5 0 0
Maxwell, Mrs. Shirley	1	1	0	Pearse, Mrs. J.				2 0 0
May, Miss E. S.	5	0	0	Pease, Miss M. M.				1 1 0
May, Frank	3	3	0	Pease, Miss Ella				1 0 0
Maynard, Miss	1	0	0	Pease, Miss M. H.				1 0 0
May, E. J.	1	0	0	Pemberton, Mrs.				
M. D. R.	0	10	0	H. E. M.				0 10 0
Meade-King, Rev. F.	5	0	0	Pennant, Hon. Mary				2 0 0
				Penrhyn, Lady				
				Gertrude				1 1 0
				Perrins, Dyson				10 10 0
				Peto, Sir Henry				
				Bart.				1 1 0
				Petherick, G. J.				25 0 0
				Phara, Mrs. C.				1 1 1
				Philips, Miss Chry-				
				tine A.				1 0 0
				Piesse, Miss E. M.				2 2 0
				Platt, John				5 0 0
				Playfair, Lady				
				Edith				1 0 0

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Porter, Surg.-Col.	1 1 0	Smith, Rev. P.	5 5 0	Weinberg, Mrs.	1 1 0	Winwood, Rev.	1 0 0
A.	1 1 0	Clementi	5 5 0	Fred S.	1 1 0	H. H.	1 0 0
Potter, J. Wilson	25 5 0	Smythe, J. H. R.	1 1 0	Wernher, Lady	50 0 0	Wishart, W.	0 4 0
P. R.	1 0 0	Sneath, George	10 10 0	Wharram, J. W.	1 0 0	Wolsey, Bart., Sir	2 0 0
Prace, Miss E.	2 0 0	Société Française		Wheatley, Joseph	1 0 0	Chas.	2 0 0
Preston, Thimnel	0 10 0	d'Horticulture	15 0 0	Wheeler, Miss L.	10 10 0	Wolsey, Gen. Sir	
Price, Athelstan	2 2 0	Sparks, Mrs. Harry	1 0 0	Whish, Miss G. M. R.	1 0 0	Wolsey, Gen. Sir	5 0 0
Price, A. E.	2 2 0	J.	1 0 0	White, E. A.	2 2 0	Wombwell, Mrs. R.	1 1 0
Price, Miss G. C.	1 0 0	Spelling, Mrs. A. G.	1 1 0	White, H. F.	1 1 0	Woodall, Mr. and	
Proby, Lady Mar-	6 0 0	Spicer, Albert	3 3 0	White, H. J.	0 15 0	Mrs. Henry	5 0 0
Probyn, Gen. Sir	2 2 0	Spicer, Monro	1 1 0	Whitehead, Sir		Wood, Mrs. J. B.	10 0 0
Dighton	2 2 0	Sprague, Mrs. F. J.	1 1 0	Beethom	20 0 0	Woods, Mrs. J. G.	1 1 0
Proctor, Miss	1 1 0	Stable, Mrs.	1 1 0	Whitfield, Mrs.		Woods, Col. H. C. M.	3 3 0
Pryor, N. R.	2 0 0	Stephens, G.	2 0 0	W. H.	0 10 0	Worsley, P. J.	50 0 0
Radi, Countess of	50 0 0	Stephens, J. W.	1 1 0	Whitett, A.	10 10 0	Wright, J.	1 0 0
Rail, Pautia	1 0 0	Stevenson, Mrs. E.	5 0 0	Wigan, Arthur L.	5 0 0	Wright, Lieut.-Col.	
Ransom, F.	1 1 0	E.	5 0 0	Wilkins, Mrs.	2 2 0	G. A.	1 0 0
Ransom, F.	1 1 0	Stevenson, Rev.	2 2 0	Williams, J. C.	105 0 0	Wright, John.	2 0 0
Rea, Mrs. Russell	0 5 0	A. B.	2 2 0	Williams, Miss E. E.	5 0 0	Wright, John.	1 0 0
Reid, Miss E.	2 2 0	Stirling, Right Hon.	2 0 0	Williams, Miss M. G.	1 0 0	V.M.H.	1 0 0
Reid, Mrs.	1 1 0	Sir James	2 0 0	Williamson, R. H.	1 0 0	Wyndham, Miss E.	1 1 0
Rendell, Mrs. R.	0 5 0	Stoeeage	1 0 0	Williamson, R. H.	1 0 0	Wyndham, H. Saxe	1 1 0
Rennie, Mrs.	1 1 0	Stone, Mrs.	1 0 0	Willink, H. G.	2 0 0	Young, Mrs. O.	1 1 0
Reuthe, G.	1 1 0	Stoerth, Mrs.	5 0 0	Willis, Mrs. W. O.	2 2 0	Younger, James	1 1 0
Reynolds, C.	1 0 0	Stracey, Mrs. Gilbert	5 0 0	Wilson, A. M.	3 3 0	Zarhorst, Mrs.	1 0 0
Richardson, C. E.	110 0 0	Stratford, Capt. H.		Wilson, Mrs.	5 0 0		
Richardson, G.	5 0 0	Wingfield	1 0 0	Wimbledon	0 5 0		
Rice, Mrs. H. C.	2 0 0	Street, Mrs. O. W.	1 1 0	Windham, Mrs. F.	1 0 0		
Talbot	2 0 0	Strickland, Mrs. R.	0 10 0	Winer, Ada	0 10 0		
Rice, Mrs. G.		Stuart, C. M.					
Spring	0 10 0	Villiers	1 1 0				
Ridley, Mrs. Mary		Stuart, Mrs. A.	1 1 0				
A.	2 2 0	Studholme, L. J.	2 2 0				
Ridley, Miss M.	1 1 0	Stydes, Miss C. J.	2 2 0				
Ridgden, Mrs. S. S.	1 1 0	Sutton & Sons	100 0 0				
Ridgden, W. J.	10 10 0	Swaine, Mary E.	1 0 0				
Riley, J.	2 0 0	Swan, Miss W. E.	1 1 0				
Rivington, C. A.	1 1 0	Swann, Mrs.	2 0 0				
Robinson, Miss M.		Swetnam, Mrs.					
E.	1 1 0	E. B.	2 2 0				
Robinson, Mrs. G.	1 1 0	Sykes, Miss E. M.	0 5 0				
H. Carew	1 1 0	Sykes, Mrs. Hard-	1 1 0				
Roehford, Mrs.		castle					
Blanche	1 1 0	Sykes, Mrs. Frances	5 0 0				
Rollit, Sir Albert	10 10 0	Mary					
Rolls, Lady Ger-		Tate, Miss S. D.	1 1 0				
trude	1 1 0	Talbot, Sir Reginald	2 2 0				
Ronaldson, Mrs.	1 0 0	Talbot, Miss E. C.	3 0 0				
Roscoe, Miss D.	0 10 0	Tatham, Miss					
Rosenheim, P.	1 1 0	Emmie	0 10 0				
Rothschild, Mr. and		Tatton, R. A.	5 0 0				
Mrs. Leopold de	50 0 0	Taylor, Capt. W.	1 0 0				
Rowntree, Joseph	5 0 0	Taylor, George	1 0 0				
Roxby, Mrs. H. E.		Taylor, Mrs.	1 0 0				
M.	0 10 0	Taylor, Rev. A.	0 11 0				
Royds, Col. Sir Cle-		Taylor, Will.	1 1 0				
ment	25 0 0	Teague, W. R.	1 1 0				
Rucker, Lady	1 1 0	Templer, Miss					
Rutherford, H. K.	1 1 0	Alicia	1 0 0				
Rutter, H. Lee	2 0 0	Thackwell, Mrs.	5 5 0				
Rutter, Mrs. H. Lee	2 0 0	Thomas, C.	2 2 0				
Sadler, Mrs.	1 1 0	Thomas, Capt. Jock-					
St. George, Mrs. E.	1 0 0	lyn H. W.	2 0 0				
St. Quinton, W. H.	5 0 0	Thompson, Mrs.					
St. Oeyth's Priory		Agnes	1 0 0				
Gardeners	1 1 0	Thompson, Mrs.					
Salt, the Misses	1 1 0	H. A.	1 1 0				
Sampson, Mr. and		Thorp, Mrs. Roby	5 0 0				
Mrs. J. H.	1 1 0	Thudichum, L. M.	0 10 0				
Samuel, Fanny E.	10 10 0	Tinne, Miss B. E.	1 1 0				
Sandeman, Col. J.		Todd, Lady White-	5 5 0				
G.	5 0 0	Tokemache, Miss					
Sanderson, Rev.		Toller, Mrs. W.	1 0 0				
Finlay	2 2 0	Tompson, Miss K. R.	2 2 0				
Sandoe, Mrs. A. K.	10 0 0	Trench, Col. C. C.	2 0 0				
Sanitas Company	1 1 0	Trevelyan, Lady					
Sargood, Lady	10 0 0	Eleanor	2 0 0				
Schuster, Mrs.	5 0 0	Tristram, Mrs.	5 0 0				
Schuster, Mrs. A.	1 0 0	Trolope, T. E.	1 1 0				
Schuster, Mrs. M.		Trower, J. S.	1 1 0				
Theresa	2 2 0	Turnbull, Mrs.	1 0 0				
Schwind, Mrs. F. S.	0 5 0	Turner, Col. F. M.	0 2 6				
Scott, Philip	2 2 0	Turner, Miss L.					
Scrimgeour, Mrs. B.		Turton, R.	0 10 0				
M.	5 0 0	Upeott, Lady	2 0 0				
Sourfield, Mrs. R.		Valentine, Mrs. M.					
A.	5 0 0	Tristram	2 2 0				
Sedgwick, Mrs.	0 10 0	Veitch, Sir Harry J.	250 0 0				
Sendall, Lady	2 2 0	Veitch, P.	5 0 0				
Sewell, W.	2 2 0	Veley, Mrs. H. M. L.	2 0 0				
Shakespeare, P.	1 1 0	Vernon, Hon. Mrs.					
Sharpe, C. J.	2 2 0	Warren	0 5 0				
Sharpe, Montagu	0 10 0	Wyse, M. Howard	1 0 0				
Sharplin, D. E. C.	1 1 0	Waddingham, Mrs.	2 2 0				
Shea, C. E.	6 5 0	Walker, Mrs. T. A.	1 1 0				
Sheard, Mrs.	1 1 0	Walker, J. Liddell	1 0 0				
Sheepshanks, Mrs.	1 1 0	Walker, Mrs.	5 0 0				
Sherriff, Miss J. W.		Wallace, Prof.					
B.	1 0 0	Wallace & Co. (Col-	1 0 0				
Shuster, Mrs. C.	1 0 0	lected by)	40 0 0				
Shute, Mrs.	1 1 0	Walton, Mrs. Emma	1 1 0				
Sidebottom, Col. W.	5 0 0	Ward, Col. H. H.	5 0 0				
Siggs, G.	2 2 0	Ward, Mrs. S. M.	1 0 0				
Simmons, Mrs.		Warre, Mrs. E. A.	1 1 0				
George	1 1 0	Warren, Miss E. M.	0 5 0				
Slade, Mrs. Wynd-		Warrender, Miss					
ham	1 1 0	A. H.	2 0 0				
Shoggy, Mrs.		Watson, Mrs. Fisher	1 0 0				
Helen J.	2 0 0	Watson, Miss K. B.	2 0 0				
Smart, James	2 2 0	Watson, Mrs.					
Smith, Mrs. Eustace	1 1 0	Miss	2 2 0				
Smith, Mrs. J.		Watt, Mrs. L. A.	1 1 0				
Bowers	0 10 0	Webb, Mabel E.	0 5 0				
Smith, Frank E.	1 1 0	Webb, Miss G. E.	1 1 0				
Smith, Frederio	1 0 0	Weekes, Arthur	0 6 0				
Smith, F. N.	2 2 0						

about thirty years. It stands on a lawn, with a south aspect, in full view of the sun. Although I have been all my life in close association with this beautiful Conifer in many parts of Scotland and England, I have never before seen it in fruit. The owner of the tree has never known it to bear cones before. The fine dry autumn and summer in Scotland last year must have thoroughly ripened the wood. I should be interested to learn if this tree has coned before in Great Britain. *James B. Allan.*

FLOWERS OF MILTON.—I have several editions of Milton, and in all of them "freak't" and not "streaked" is used to describe the variegation in the Pansy. The former describes more faithfully than the latter the markings in the flower. Canon Ellacombe was mistaken in attributing to Milton the earliest use of Iris as an English word. A reference to Lyte's *Nieuwe Herball* (1578) shows it had been incorporated in the English language at that date. Lyte gives Irises as the plural. It is doubtful if *Fleur-de-luce* in its many spellings was ever applied to Irises as a whole. The *Fleur-de-luce* of the early poets seems to have been Iris florentina, e.g., "Lillies of all kinds, the fleur de lence being one." The branched Palm of Milton must be one of the Willows. The name was in constant use, and has come down to the present day, being common in parts both of England and Scotland. By the way, can anyone give me the scientific name for "shate"? *B.*

—May not the "rathe Primrose that forsaken dies" be an allusion to the quick fading of the earliest flowers when they are plucked and thrown down (forsaken)? The soft, tender petals of the "rathe" Primroses flag very quickly; later on the flowers have more substance and last much longer. *A. Cecil Bartlett.*

HEATHER ON WISLEY COMMON.—A remarkable patch of purple Heather is to be seen on Wisley Common adjacent to the well-known Wisley Hut Hotel and within a mile of the R.H.S. Gardens. The colour is far more dazzling and beautiful than any to be seen elsewhere. This I attribute to that part of the common being on fire some four years ago—hence the new growth. Every shoot is full of flower, which makes a lovely carpet. *W. H. Bailey, Burwood, Cobham.*

FOREST TREES IN TRENCHED GROUND.—The object of this note is not merely to corroborate Mr. Vicary Gibbs' remarks on p. 111, but to give a few of my own experiences with the planting of forest trees. On this soil, which is heavy and retentive, with a hard pan of subsoil through which the roots penetrate with difficulty, Larch trees are subject to canker after a certain number of years' growth, but where the soil is trenched two feet deep, canker is unknown. This would seem to dispose of a theory which is fairly widely credited—that canker in Larches is due to abrasions of the skin, in which the floating spores find lodgment. With reference to Mr. Gibbs' remarks on the deleterious effects on orchard trees of the growth of grass, these are supported in the case of an orchard near here. The trees were properly planted and should have grown well, but owing to the spread of the grass at their roots they are becoming quite crippled and stunted. *E. Molyneux, Swanmore Park Farm.*

NURSERY INSPECTION IN FRANCE.

The Journal of the National Horticultural Society of France for June, 1915, contains a summary of the regulations made for the inspection of plants in relation to the Rome Convention of 1914. It is worth noting that the French Government has organised a service to commence to carry out a part of this inspection, clearly expecting to adhere to the convention, and anticipating that the convention will be adopted pretty much as it stands. It is therefore of particular interest to see in what direction it is considered necessary to proceed under this convention—the formal beginning of what, presumably, would be done here if this country adhered to the convention.

HOME CORRESPONDENCE.

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

NATIONAL DIPLOMA IN HORTICULTURE.—There has been a good deal of discussion as to the advantages of this examination, and whether it is worth the expense it entails. Among North-country gardeners there is also a feeling that to be examined at Wisley Gardens in the South of England is very little use to them. May I, as a North-country gardener, say a word or two in answer to this objection? It is my opinion that the scheme is of undoubted merit, and those fortunate enough to obtain the diploma will always find it useful to have something tangible to show as evidence of their abilities. The examination at Wisley is such as to exclude an unqualified man; again, the mere theorist or student has no chance of success; but a good, practical gardener can pass whether he comes from the North or from the South. Again, if a man has specialised in any line—fruit-growing, Orchid-growing, or market-gardening—he can be examined in that special section of the work; and always by practical men, not mere theorists. Therefore I would say to all gardeners, go in for the diploma. I am, of course, aware that written tests are not the best way of examining a practical gardener, and it is to meet this difficulty that a part of the examination consists of viva voce questions on the written answers. Personally, I think that in this direction lies the salvation of our profession. *Cymro.*

CUCUMBER EVERY DAY (see pp. 50, 115, 138).—I have read with much interest the comments on the productiveness and all-round utility of Every Day Cucumber. This variety is undoubtedly widely esteemed and justly so, but I may state that I am not greatly impressed with the accounts given as to the size of the fruits. With proper cultivation the fruits of any good variety of Cucumber will attain dimensions beyond the normal if allowed to remain long enough on the plant. I find that young, good-shaped fruits of medium size are most appreciated at table, and I know of no Cucumber that meets these requirements quite so well as Delicacy. This variety seems to thrive and give of its best under ordinary cultivation, whilst the fruits are as near to perfection, both in form and flavour, as one can hope to obtain. We have grown it here for two seasons, but unfortunately I have kept no record as to the number of fruits we have cut. However, I can safely assert, without fear of contradiction, that it is extraordinarily prolific, and it is a variety of much value to private gardeners. *P. W. Miles, Ware Park Gardens, Ware, Hertfordshire.*

CONES ON ARAUCARIA IMBRICATA.—During a recent holiday in Scotland I visited Crieff, Perthshire, and in a villa garden there I saw a tree of *Araucaria imbricata* bearing about one dozen beautiful cones, all about the size of an average Pineapple. The tree was in perfect health. I should imagine that it had been planted

The staff appointed in France includes a chief inspector and an assistant chief inspector, both of them men of wide reputation in Europe. There are a number of inspectors, who inspect establishments engaged in plant export, and give certificates; there are also assistant inspectors and "contrôleurs." The last are resident during the export season, so that they can be continually present at exporting establishments and supervise the packing.

The inspectors and assistant inspectors have also to be constantly recording what pests and diseases occur in their districts, and are expected to be well informed on the condition of the crops as regards disease, so that the occurrence of dangerous diseases may be immediately known.

Fees are payable by the licensed nurserymen and dealers to cover the expense of this service of inspection.

DUTIES OF EXPORTING FIRMS.

In order to get a licence, the firm applies annually, paying a fee: the form of application for nurserymen states that the applicant is

signment any plants other than those that have already been inspected, then inspection of these must also be obtained. Each consignment can be inspected separately if preferred, and if it be possible. The exporter has to number each consignment, attaching this number to all documents.

The following are the measures to be taken in regard to nurseries and consignments:—

(1) Nurserymen have to take all precautions against pests and diseases, and to follow the advice and the formulae laid down by the phytopathological service.

(2) During the winter, the nests of the brown-tail moth, the egg-masses of Gipsy and Lackey moths must be destroyed on fruit trees and on adjoining hedges. From the first of September all new nests of caterpillars are to be destroyed on stock destined for export in the following autumn or winter.

(3) Before lifting fruit-tree stock, the nurseryman will strip all leaves and remove all nests, egg-masses, etc.

(4) Workmen who sort the plants, either in the nursery or in the building, should be well ac-

quainted with the carrying out of the above inspection will mean.

Meanwhile the French nurseryman is getting used to being licensed, to having his stock inspected, to being obliged to get a certificate before exporting, and the inspection and certificate now relate only to a few pests or diseases. As each country joins the scheme the nurseries will have to be inspected for the diseases also listed by these countries, and the kernel of the matter lies in the list of diseases each country will schedule.

Nurserymen in this country will note that in these regulations new stock can be obtained only from other licensed nurseries—i.e., if a particular nursery desires to obtain stock other than that it has grown, it can do so only from other licensed nurseries, and must give notice if this stock is to be included in any consignment.

The regulations dealing with the question of exporting nurseries, and the decree authorising them, are dated February 15, 1915. H. M. Lefroy.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 31.—As on the last occasion, an exhibit from the Hon. VICARY GIBBS' garden was the outstanding feature at the fortnightly meeting held on Tuesday last in the Vincent Square Hall, Westminster. Mr. GIBBS showed an interesting collection of trees and shrubs of recent introduction from China, consisting of 260 plants in pots. A Gold Medal was awarded for this remarkable group.

The Floral Committee awarded four other medals for groups and twelve Awards of Merit to novelties, of which eight were Dahlias. The awards to Dahlias were made in conjunction with the National Dahlia Society, which conferred its own Certificate of Merit in each case.

The Orchid Committee awarded two medals for groups, and recommended three First-Class Certificates, and two Awards of Merit to novelties.

The Fruit and Vegetable Committee sat for much longer than usual, owing to the large number of subjects submitted for awards. Messrs. LAXTON BROS. showed no fewer than twenty-six seedling Plums, and many seedling Pears, Apples and other fruits were shown, besides collections of fruits and vegetables.

This Committee recommended one First-Class Certificate, two Awards of Merit, and two Cultural Commendations.

At the 3 o'clock meeting an address on "The Respective Values of Organic and Inorganic Manures" was delivered by Mr. F. E. P. HODSOLL.

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. Geo. Harrow, G. Reuthe, J. W. Moorman, J. F. McLeod, W. Howe, J. Jennings, W. H. Page, Chas. Dixon, H. J. Jones, A. Turner, Chas. E. Pearson, Chas. E. Shea, J. T. Bennett-Poë, W. P. Thomson and E. H. Jenkins.

AWARDS OF MERIT.

Eschscholtzia The Geisha.—This variety is of distinct colouring, the exterior being bronzy-scarlet with a glowing sheen and the interior orange colour. The petals are pleasingly fluted. Shown by Messrs. JAMES CARTER AND Co.

Cydonia Mollardii.—A new Chinese Quince, with narrow, Willow-like foliage. The plant was about 12 feet high, of distinct pyramidal shape, and bore numerous Lemon-shaped fruits close to the main stem.

Berberis Sargentiana.—A hardy, evergreen species, with reddish stems bearing relatively large leaves, some of which were bronze tinted. Subtending the foliage are three large spines, that add to the decorative effect. The berries were immature, but we were informed that they are a dull purple colour when ripe. The *Berberis* and the *Cydonia* were shown by the Hon. VICARY GIBBS (gr. Mr. Edwin Beckett).

Monbretia Queen Elizabeth.—A hybrid raised from *George Henley* × *Pageant*. The



FIG. 51.—PLUM ALLGROVE'S SUPERBE.

(See awards by the Fruit and Vegetable Committee, see p. 159.)

already well acquainted with the regulations in force between France and the countries he will deal with: that he will conform to the regulations that may be laid down: that he will give every facility to officials: that he agrees not to include in consignments from his establishment plants derived from other establishments without having previously given ample notice (*these other establishments also to be licensed*): that he will attach to each consignment a copy of the invoice, with values, and a declaration that the whole consignment is from licensed and inspected cultivation. A similar application is to be made by exporters of agricultural produce.

The licensed firm can then apply for inspection of the total stock intended for export. This inspection must take place within eight days of the application, and the firm then gets a certificate of inspection for that stock. Certificates of freedom from disease are given on the above inspection, if required, but no certificate will be given without a copy of the usual exporting documents. If it be desired to include in a con-

quainted with the egg-masses, caterpillar-nests, etc., and make certain that none are left on. If sorting is done in a building, this must be a well-lighted one.

(5) When stocks of fruit or fruit trees, Roses and other plants are brought in tied bundles to the despatching building, if the plants measure more than 5 millimetres at the crown, they are not to be packed in cases until they have been untied and examined. For plants measuring from 1 to 5 millimetres, the workman doing the packing separates the twigs to the point where they are tied, and makes certain that no caterpillar-nests are present. This final examination is to be carried out by a special workman or by the workman who finally places the plants in the case.

The regulations about inspection of all stock to remove egg-masses and nests are designed to comply with the requirements of the United States. That country does not propose to adhere to the convention, and has its own restrictions on imports; but until the countries that adhere publish their list of scheduled diseases, no one can

large, bold flowers are coloured orange-red with gold colour in the base of the tube. Shown by S. MORRIS, Esq. (gr. Mr. G. Henley).

The following varieties of Dahlia received the R.H.S. Award of Merit and the National Dahlia Society's Certificate of Merit:—

Dahlia Miss Judd.—A Cactus variety of the exhibition type. The florets are a pale yellow colour with lighter tips.

D. Washington.—A large, well-formed Cactus variety of deep-red colour with sheen of purple at the tips.

D. Herald.—A Collerette variety of large size. The outer florets are magenta-coloured at the tips, the central parts being reddish-orange passing to gold at the base. The collar is white and gold.

These three were shown by Messrs. J. STREDWICK AND SON.

D. Caprice.—A single variety of very distinct appearance. The florets are white with a well-defined narrow band of claret-colour along the margins. Shown by Mr. C. TURNER.

D. Yellow Star.—A variety of the new "Star" type, like a "cupped" single Dahlia. The tone is clear yellow, and the orange-coloured centre adds to the bloom's attractions.

D. Primrose Queen.—The colour of this Collerette variety is pale-lemon, the collar being white.

These two shown by Messrs. J. CHEAL AND SONS.

D. Scarlet Queen.—A grand Collerette variety of scarlet colour and perfect form. The collar is gold-coloured and the disc orange. Shown by Messrs. DOBBIE AND CO.

D. Warneford.—This variety marks a great advance in the decorative type. It is a clear white bloom, of very large size and exceptionally handsome shape. It has much merit for decorative purposes, and will doubtless prove a useful flower for florists. Shown by Mr. WEST.

Orchid Committee.

Present: Mr. J. Gurney Fowler (in the chair), Sir Jeremiah Colman, Bart., Sir Harry J. Veitch, Messrs. Jas. O'Brien (hon. sec.), Gurney Wilson, R. A. Rolfe, Pantia Ralli, T. Armstrong, A. McBean, W. Cobb, W. H. Hatcher, C. H. Curtis, J. E. Shill, W. H. White, S. W. Flory, and W. Bolton.

AWARDS.

FIRST-CLASS CERTIFICATE.

Catasetum Bungeothii (pileatum) white variety, from Sir JEREMIAH COLMAN, Bart, Gatton Park, Surrey (gr. Mr. Collier). A magnificent clear white variety, probably the best and largest of its kind ever exhibited. The plant was a fine specimen, showing good cultivation. The spike bore very large, white flowers, of wax-like substance, the spur of the lip having a small green spot with yellow shading in front.

Sopbro-Cattleya Sylvia (S.-C. Doris x C. Hardyana), from J. GURNEY FOWLER, Esq., Brackenbush, Pembury (gr. Mr. J. Davis). A beautiful hybrid, with flowers of Cattleya shape, and the darkest and finest in colour of any Sopbro-Cattleya crosses. The sepals and petals are dark vinous purple in colour, with a ruby-crimson shade. The crimped lip is deep claret coloured, with gold lines running from the base.

Cattleya Sybil var. W. R. Lee (Dowiana aurea x iridescens), from W. R. LEE, Esq., Plumpton Hall, Haywood, Lancashire (gr. Mr. C. Branch). A second form of the beautiful rounded labellum type, similar to that illustrated in *Gard. Chron.*, Aug. 21, 1915, p. 119. The flower has the form and fragrance of *C. Eldorado*, one of the parents of *C. iridescens*, but the front of the lip is broader. The sepals and petals are Cowslip-yellow, tinged with bronzy-rose; the lip is ruby-red with gold veining at the base.

AWARD OF MERIT.

Laelio-Cattleya eximia delicatissima (L. purpurata x C. Warneri).—A magnificent variety of the fine cross originally flowered by Messrs. JAS. VEITCH AND SONS in 1891. The plant has two spikes, each with four very large flowers, composed of white sepals and petals and very handsome, broad lip, which is white at the base and with a large, blush-white blotch in front,

the sides and central lines being dark purple. The plant, which was in the collection when at Glebelands, is a splendid specimen.

Cattleya Hardyana alba Fowler's variety.—This variety is equal in size to the best coloured *C. Hardyana*, but has white sepals and petals. The lip is ruby-purple, with a yellow disc. A fine plant of *C. Hardyana* Countess of Derby was shown for comparison.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., was awarded a Silver Flora Medal for a group, which, besides those described under Awards, included several good forms of *Laelio-Cattleya eximia*, a very dark-flowered *L.-C. Geo. Woodhams*, *Cattleya Harold*, showy unnamed seedlings flowering for the first time, and *Miltoniodes McNabiana* (Odm. Edwardii x M. Bleuana), having pleasing whitish-rose-coloured flowers, marked with claret colour.

Messrs. CHARLESWORTH AND CO., Haywards Heath, were awarded a Silver Banksian Medal for a group of finely-flowered Orchids, among which were noted good *Odontoglossums*, the large white *Cattleya Alcimedea* (*Gaskeiliana alba x labiata alba*), choice examples of *C. aurea*, *Vanda coerules*, *Habenaria Suzannae*,



THE LATE F. W. HARVEY.

Catasetum Russelianum and the rare *Laelia bella* (*majalis x purpurata*).

R. G. THWAITES, Esq., Chessington, Streatham (gr. Mr. Hannington), showed a selection of *Odontiodas*, *Odontoglossums*, *Laelio-Cattleya callistoglossa*, *L.-C. Rubens*, and other Orchids.

Messrs. FLORY AND BLACK, Slough, showed the new *Brasso-Cattleya Miguel* (*B. Digbyana x C. Carmen*), a very large, pale blush-rose flower, with a marbling of purple on the broad, fringed lip; *B.-C. Ilene magnifica*, a grand light rose flower, with chrome-yellow disc to the lip; *B.-C. André Maron* (*C. Schröderae x B.-C. Mrs. J. Leemann*), and a good form of *Laelio-Cattleya Rubens*.

Messrs. HASSALL AND CO., Southgate, showed a selection of their *Cattleya Sybil*, which has already been productive in fine novelties. The plants were all pretty, and varied considerably in colour and shape. The firm's own form of *C. Adula* and other hybrids were also shown.

Lieut.-Col. H. V. WARRENDER, High Grove, Pinner (gr. Mr. Strong), exhibited *Cattleya Clarkiana* (*bicolor x labiata*).

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), J. Willard, Edwin Beckett, W. Pope, H. Markham, A. R. Allan, Horace J. Wright, A. Bullock, A. W. Metcalfe, P. C. M. Veitch, E. A. Bunyard, Owen Thomas and W. Poupart.

AWARDS.

FIRST-CLASS CERTIFICATE.

Himalayan Blackberry.—The award was made, after trial in the Society's gardens at Wisley, for prolific cropping and excellence of quality. The sprays exhibited bore a great resemblance to our native Blackberry, but the berries, which were not quite ripe, were a little larger, and the trusses more numerous fruited. Shown by Messrs. LAXTON BROS.

AWARDS OF MERIT.

Plum Allgrove's Superb (see fig. 51).—A desert variety of purplish-red colour, oval in shape, with a prominent suture on one side; the stalk is about $\frac{3}{4}$ inch long. The flesh is of a delicious flavour and equal in quality to Jefferson, of which it is stated to be a vegetative sport. Shown by Mr. ALLGROVE, Langley.

Pear Laxton's Superb.—A dessert variety of medium size, roundish in shape, with greenish-yellow skin flushed with red on the side next to the sun. The flesh is white, juicy and of excellent flavour. The award is made tentatively, subject to a report on the habit of the tree by a deputation of the Committee. Shown by Messrs. LAXTON BROS.

CULTURAL COMMENDATION to Mr. W. POPE, Welford Gardens, Newbury, for fruits of Apple Chas. Eytz; and to Mr. A. R. ALLAN, gardener to Lord Hillingdon, Uxbridge, for superb fruits of Nectarine Milton.

(To be continued.)

Obituary.

F. W. HARVEY.—It is with great regret that we learn of the sudden death, following an operation, of Mr. F. W. Harvey, the editor of our contemporary, *The Garden*. Mr. Harvey had been suffering from an abscess on the brain, for which he underwent an operation. He was removed to the London Temperance Hospital on the 23rd ult., but succumbed early in the morning of the 31st. Early in life Mr. Harvey engaged in the business of market gardening, and later studied horticulture at the County School of Horticulture, Chelmsford, under Mr. C. Wakely. He was afterwards a member of the garden staff at Kew, where he remained until 1905, leaving to take up the position of sub-editor of *The Gardener*, under Mr. W. P. Wright, who was at that time editor. Here he stayed for about three years, and left to take up a similar position on *The Garden*, under the late Mr. E. T. Cook. He made the best use of the experience thus gained, and when, about four years ago, Mr. Cook left for America, Mr. Harvey was able to take up the position of editor thus vacated. Under his editorship *The Garden* has more than maintained its standard, and his loss will be deeply felt by the staff, with whom he worked in amity and harmony. Although his duties were onerous, Mr. Harvey found time to interest himself in matters connected with horticulture. He was chairman of the Sweet Pea Society in 1914, a member of the Floral Committee of the R.H.S., and a member of the Council of the National Rose Society. Mr. Harvey leaves a widow and one son.

J. POWLEY.—We regret to learn of the death of Mr. J. Powley, which took place at Norwich a few days ago. Mr. Powley was one of the old school of gardeners, and was very successful as a grower and exhibitor. He was at first engaged in private gardening, but in 1881 he left private service and started as a market grower. He took a keen interest in local horticultural matters, and was for many years president of the East Anglian Horticultural Club. During the past year he was confined to the house by the malady which subsequently proved fatal. He was deservedly popular among horticulturists, and will be very much missed.

G. F. COGGER.—We learn from the *Beckenham Journal* of the sudden death of Mr. G. F. Cogger, who was for nearly twenty years gardener to Mr. Wm. Potter, of Elmside, Beckenham. Mr. Cogger was a prominent local horticulturist, and frequently acted as judge at local and neighbouring shows.

ANSWERS TO CORRESPONDENTS.

"There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self."—*Gardeners' Chronicle*, No. 1, Vol. I., January 2, 1844.

ASTERS FAILING: J. A. The Asters have been attacked and killed by the fungus *Thielavia basicola*. In future, a fortnight before planting or sowing, you should soak the soil with a solution of one part formalin to twenty parts of water.

BEECH DISEASED: H. S. The Beech is affected by white scale, or "felted Beech Coccus." The best remedy is the application of paraffin emulsion, prepared by mixing a solution of soft soap in boiling water with an equal quantity of paraffin, thoroughly mixing and churning, and adding, when required for use, twenty times the bulk of water, churning and mixing as before. You should apply the mixture with a scrubbing brush on the bark, taking care to penetrate into all the cracks. A handful of sulphur and a pint of turpentine may be added with the water, if desired. If you prefer the spraying method, use the following formula:—1 lb. commercial caustic soda dissolved in water, add 1 lb. crude potash or pearl ash, also dissolved in water; add 3 lb. soft soap, with sufficient water to make up to ten gallons. This mixture may be used as a spray in winter or spring, and should be applied two or three times at intervals of a few days. As the mixture is very caustic, closely fitting rubber gloves should be worn by the operator. It may be observed that at the present time, potash or pearl ash is very difficult to obtain, so that the first-named remedy would probably be preferable.

BLACK ALCANTHE GRAPES: W. P. We have inspected the Grapes you sent and consider them very satisfactory; they are well coloured and finished, and have all the appearance of having been well cultivated. It is, however, to be remembered that the variety is not one that provides much scope. Its qualities are rather those of free fruiting and long keeping than of delicate flavour; indeed, it is usually considered of third-rate quality. Further, the past wet season has been very unfavourable. Probably your house has an outside border, which would mean that the roots, through no fault of your own, have been too wet nearly all the season; and this would certainly mean a deterioration in the flavour of the Grapes. If next season is a drier one you will probably find that the flavour is improved; but, as before observed, the variety is not first-rate, and will never attain to more than mediocrity.

"BOTANICAL ANNUAL": W. F. The first and only issue of this work was launched by Robert Mudie in 1832. The book appears to be somewhat scarce, but there is a copy at the library of the Linnean Society and one at Kew. It is of no great informative value.

CAULIFLOWERS FAILING: T. The Cauliflowers you send are what is known as "blind." The cause of this affection is not known, but it is quite a characteristic of the Brassica family, and among almost every sowing of Cauliflowers there are to be found some few such as you send us. As the cause is not known it is difficult to see how to prevent it; the only thing is to see that the cultural conditions are the best possible, so as to leave nothing to be desired in this respect.

CELERY PLANTS AFFECTED: J. S. The plants appear to be suffering from a disease commonly known as Celery leaf-spot (*Septoria petrose-*

lini var. *apii*). Sometimes the progress of the disease can be arrested by spraying with Bordeaux mixture, but as it is very infectious the best plan is to pull up and burn all infected plants, and spray all the others to check any infection which may have already been carried to them.

CURRENT TREES FAILING: F. D. C. The trees were injured in the first instance by being infested with aphids. These insects deposited what is known as "honey-dew" on the foliage, which was then attacked by the fungus *Capnodium footii*, or sooty mould. The affected leaves should be picked off and burnt, and further attacks discouraged by keeping the trees free from aphids, on the honey-dew of which the fungus feeds.

FARMING FOR RETIRED GARDENERS: *An Old Reader.* We note that you desire to give up private gardening and take up farming or nursery-gardening instead. It is true that on the whole dairy keeping may pay better at the present time than a general nursery (by which you probably mean one chiefly for plants and flowers); but a good deal of experience is needed for a farm, as well as theoretical knowledge. Probably you would find a market garden better fitted to your capacities; well-grown fruit and vegetables are likely to find purchasers, especially now that meat is getting so dear. Your experience in the kitchen gardens of private houses would enable you to make the best use of your land, and you would have learned what sort of demand to expect in each season of the year. We do not accept fees for advice, and have therefore placed your contribution in the collecting box of the R.G.O.F.

GLADIOLI: Lt.-Col. B. The spikes of Gladioli you sent us arrived in good condition, and we recognised them as belonging to the section *G. Childsii*, the American strain of *G. Nancianus*. The flowers were well grown, of large size on long stems. Perhaps a florist might urge against them the criticism that they were a little rough, but they were certainly attractive.

GRAPES DISEASED: *Minos, Herts.* The Vines are attacked by the fungus *Botrytis*. In order to avoid a similar attack next spring, you should spray the plants with Bordeaux mixture at half strength, at intervals, until the flowers are ready to open. It will be well at the same time to look well after the ventilation of the house, as too much moisture encourages the spread of the disease.

HOLLYHOCK DISEASED: W. T. and Co. The Hollyhock is affected by the fungus *Puccinia Malvacearum*. You should spray the plants next spring with a solution of liver of sulphur, beginning when the first leaves are quite young. With regard to the grub which bored the stem of the Potatoes, the larvae of several moths have this boring habit, but in the absence of a specimen the particular one cannot be identified.

LILIUMS DISEASED: E. d'L. We cannot determine the nature of the disease without seeing specimens, but the plants are probably affected by the disease caused by the fungus *Botrytis*. If they are badly affected the only thing to do is to take them up and burn them, planting a fresh stock as far from the old position as possible. It is sometimes possible to eradicate the disease by keeping the bulbs in flowers of sulphur through the winter, or any plants which are not badly affected may be treated by spraying in the early spring with a weak solution of potassium sulphide.

NAMES OF PLANTS: *Brewer.* The two detached leaves are not sufficient to enable us to recognise the plant. Send a flowering shoot.—*B. H. M., Brighton.* *Bartsia Odontites*, a semi-parasitic plant, which feeds on the roots of the grass. Pulling up and burning the plants or close cutting to prevent seeding will help to keep the pest in check.—*R. W. 1.* *Buddleia variabilis*; 2, *Bocconia cordata*; 3,

Cistus species; flowers too withered for identification.—*H. B., Ullswater.* *Olearia Haastii*.

OUT-DOOR CROPS FOR MARKETING FROM OCTOBER TO MARCH: *Scotch Grower.* We suppose you do not mean to raise the plants in October and to have them ready for marketing in March, as vegetation is nearly dormant during the interval indicated. There would not in most cases be time to mature the crops by March, though Radishes sown in October might be ready for market purposes by the middle or end of March. Good sturdily-grown Wallflower plants raised from seed sown in May or June and transplanted in good ground in October would be saleable in March. Plants of well-established Cos Lettuce raised from seed sown in July and transplanted in October would, although not then fully developed, be saleable in March, when we presume you require the ground cleared for other crops.

PLANTING APPLE TREES: A. D. (1) There is a good deal of difference of opinion on the point whether bush or standard Apple trees are the more profitable. For planting on a large scale, short half-standards, with trunks only 2 ft. high, are generally preferable to bushes, both for horse cultivation and where Gooseberries and Currants are to be planted among the trees. (2) Lime or chalk is desirable in any soil. For heavy land, a dressing of chalk, 10 to 15 tons per acre, is the best to apply, as it improves the soil for working, and its effects last for many years. Waste chalk can be had for nothing at many lime works. (3) If the land is not well supplied with organic matter, a dressing of about 12 tons of decayed farmyard or London manure before the final ploughing is desirable. If, however, the land is already in a rich condition, it will not need manure until the trees begin to bear to a considerable extent.

POTATOS SCABBY: J. G. W. The scab is caused by the fungus *Oospora Scabies*. In order to prevent further attacks, you should sprinkle a little powdered sulphur in the rows when planting. It may also be mentioned that the presence of lime in the soil favours the growth of the disease.

PRUNING OF HARDY FLOWERING SHRUBS: *Journeymen.* Probably you would find useful *Tree and Shrub Culture*, in the Pictorial Practical Series, by Wright and Dallimore. You can obtain the book from our publishing department, price 1s. 3d. paper, or 1s. 9d. cloth, post free.

ROSE TREES AFFECTED: A. J. There is no disease to be traced in the Roses. The trees are evidently being grown in conditions unsuitable to this particular variety, and if you investigate the particular bed in which the affected trees are growing, you will probably find some difference of soil or position which will account for their doing badly while those in the other beds grow satisfactorily.

SWEET PEA INJURED: J. W. There is no disease present in the Sweet Pea you send us, and the affection must therefore be due to some error in cultural treatment.

TOMATO LEAVES AFFECTED: *Gardener, Herts.* There is no disease present in the leaf sent for our inspection; it is merely scorched by the sun. If you ventilate the house early in the day, and shade the plants from very hot sun, you will probably find that the condition complained of disappears.

WEEDS ON A LAWN: T. N. The smaller specimen is *Sagina procumbens*, the other *Cerastium triviale*. Dress the lawn with sulphate of ammonia at the rate of 2 ounces to each square yard of turf.

Communications Received:—A. C. R.—A. D. W.—S. H.—D. B. A.—T. H. M.—H. B.—W. R.—E. C. H.—C. L.—W. W. C.—T. T.—W. W. T.—Anxious—C. B.—H. S.—T. H. G.—A. T. S.—H. H.—P. B.—B. L.—Pharmaceutical Journal—F. C.—E. B.—F. J.—Edina—W. F.—J. P.—J. H.—W. W.—R. A. R.—A. T. H.—A. C. H.—B. and F. S. S.—A. J. L.—B. of A.—H. D.

THE Gardeners' Chronicle

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LA MALMAISON.

THE celebrated and charming home of the Empress Josephine, consort of Napoleon I., was opened from June 6—July 15 for a small charge to visitors, the funds received being devoted to the assistance of "orphans of the war."

The house and what remained of the grounds—some 10 acres out of the 4,500 of which they consisted at the time of the death of the Empress—were purchased in 1896 by M. Osiris, who presented them to the Republic.

M. Osiris had also the intention of erecting in the Château a Napoleon museum, and he intended to endow it with a sum of £25,000, but his death occurred before the project was carried out.

The park, has, however, been reconstituted. Thanks to M. J. Gravereaux and to Madame Philippe de Vilmorin it has been planted with favourite flowers of Josephine, and a rosary has been laid out and planted with Roses which are known to have existed in the time of the Empress.

The estate was purchased by Josephine in 1799, and during the Consulat, Bonaparte spent some of his happiest hours there. Thus Bourrienne remarks in his memoirs: "Nowhere, unless on the battlefield, have I seen Bonaparte more satisfied than in the Gardens of La Malmaison." Readers of Lord Rosebery's *Last Phase* will remember how Napoleon at St. Helena, in his shipwrecked days, found consolation at times in the cultivation of his garden.

The foremost landscape gardeners of the day—Howatson, Morel, and Berthault—were engaged in designing the pleasure grounds of La Malmaison; but it was for its flowers that La Malmaison was chiefly famed. Model glasshouses were built for the more tender subjects. Plants were sought everywhere, and England—then at war with France—re-exported from London the consignments of plants captured by its men-of-war. For Josephine had a passion for flowers of all kinds: she desired to have all at La Malmaison, in spite of, or because of, their price. Notwithstanding the war, she remained in correspondence with Kennedy, the celebrated nurseryman of Hammersmith. Josephine's predilection had a powerful and happy influence on the development of French horticulture. Upwards of 200 species of plants flowered for the first time in those gardens, and their descriptions were given in a wonderful work, no longer to be obtained—*Le Jardin de la Malmaison*—finished by Bonpland, the successor of Mirbel, between 1812 and 1816. Three plants were dedicated to the Empress: (1) *Brunsvigia Josephinae* Ker-Gawl, figured under the name of *Amaryllis Josephinae* in the *Liliaceae* of Redonté. This plant was brought from the Cape by a Dutch sailor, and grown for sixteen years without flowering in a garden in Holland. Josephine bought it and brought it to La Malmaison, and it flowered in 1811. Of recent years Van Tubergen has obtained hybrids between this rarely cultivated plant and *Amaryllis Belladonna*. (See *Gardeners' Chronicle*, September 16, 1911, fig. 101.) (2) *Josephinia imperatricei* Vent, also figured in *Le Jardin de la Malmaison*, is a biennial member of the *Pedaliaceae* from the Celebes. Although intended to commemorate Josephine, it has disappeared entirely from cultivation. (3) *Lapageria rosea*, named in honour of Josephine's daughter, is widely cultivated.

Josephine loved Roses above all other flowers, and desired to collect all the then known varieties. To this end she laid the collections of Dupont and de Vilmorin under contribution.

The success of the effort made by M. Gravereaux to re-create the Empress' Rose garden has been considerable. In spite of the difficulties of tracing the names through a century-long maze of synonyms, no fewer than 197 out of the 250 varieties which La Malmaison possessed have been found and restored to the garden.

After Josephine's divorce she resided continuously at La Malmaison, seeking consolation like many another in the flowers of the garden. In 1814 came the invasion. The ex-Empress fled, but was recalled to La Malmaison by the victorious allies. Victory, however, could mean nothing to her. She fell ill on her return and died after a few days' illness. Ten months later Napoleon escaped from Elba, learned of the death of Josephine, and made a pilgrimage to her tomb. Once again, on June 24, a broken man, he paid a final visit to La Malmaison. Waterloo had been fought and won, and "all the rest for which he toiled forgot." A. M.

GATTON PARK.

GATTON PARK, the residence of Sir Jeremiah Colman, Bart., is one of those favoured country places near London which retain their atmosphere of seclusion in spite of the advance of the builder. This immunity is due in considerable measure to the contours and great trees of the park, which accentuate the restful influence of the lake in the valley.

The large expanse of water is maintained by the overflow from many ornamental ponds which contribute greatly to the charm of the beautiful grounds. Our illustration (fig. 52) is characteristic of the general scenery, and is reproduced from a photograph taken from the bank of the upper fish pond.

Gatton Park is one of the many places improved by "Capability" Brown, and, when enjoying the beautiful landscape effects he inspired a century or more ago, one feels very charitably disposed towards him, in spite of the animadversion he has met with.

Fig. 53 illustrates an attractive feature at Gatton Park which we prefer to designate as a "water garden," since one oriental lantern does not make a Japanese garden. In this view we are influenced by the recollection of our own feelings when we have been confronted abroad by specimens of so-called "English" gardens. Be that as it may, this particular garden nestles most happily between the wood and the lower fish pond, and offers many charming effects. The natural opportunities offered by the site of this garden were fully realised by those who designed it.

The pool shown in fig. 54 lies in the foreground of the view of the park as seen from a recessed seat in the rock garden.

The water garden illustrated in fig. 55 forms one of the many charming features in the grounds of Gatton Park. It was devised four or five years ago with the view of masking the sluggish effect of the stream which connects the lower fish pond with the great lake. It is evident that the work has quickly matured. This is due partly to the shelter given by the wood from the prevailing wind, and also to the rich alluvial soil which had accumulated on the site. Neither must one forget the careful supervision given to every detail at Gatton Park, for a water garden needs constant attention if it is to retain its intended attraction.

Water effects are a great feature of Sir Jeremiah Colman's beautiful estate, and there are few scenes in the grounds which are not enlivened or made restful, as the case may be, by this element.

The pool in question is fed by an ample fall of water down the face of a cliff which is clothed by many choice rock plants.

The rock garden itself is in the form of a horseshoe, of which the pool occupies the centre.

The flanks of the rock garden are protected by old Yew trees, which help to make it one of the most peaceful spots in the serene atmosphere of Gatton Park.

ORCHID NOTES AND CLEANINGS.

CATTELEYA SYBIL VAR. GEORGIUS V. REX.

MR. W. R. LEE informs us that the name of his *Cattleya*, which received the R.H.S. First-class Certificate on the 31st ult., when shown as *Cattleya Sybil* var. W. R. Lee, should be *Cattleya Sybil* var. *Georgius V. Rex*.

"THE ORCHID WORLD."

THE issue of *The Orchid World* for September completes the fifth volume. This excellent illustrated monthly journal maintains its reputation as a medium of information on matters of current interest to orchidists, and for ably written articles on cultural details. The September number contains illustrations of *Odonto-*

cultivation is *O. maculata*, and I have known *O. latifolia* to thrive for many years among hardy herbaceous plants. Its final disappearance was, I believe, due to a workman's carelessness rather than to a weariness of life in the plant itself. *O. mascula*, one of the earliest to flower, succeeds splendidly on the north side of a rockery where it is little exposed to direct sunshine. I have not found so many colour forms of this as of *O. maculata*, nor a pure white variety, but have seen charming rose-coloured varieties, as well as some of intense purple which on the whole excel others in colour value. Like many other plants these shift their positions, though it is only in the course of very many years that one notices the progress they make. They do not really die out of stations

tubers. These names are reverend with age, though many names are older by centuries. The "Long Purples" or Dead Man's Fingers of Shakespeare have given rise to much controversy as to the plant the poet had in his mind. The two last named, if we go by the tubers, would be suitable, but the colours protest against that acceptance, and the other flowers, Columbines and Crowflowers, indicate an earlier period of the year, so that the question is one that perhaps will never be settled satisfactorily. The "pale Gander grass" of Davor's poem has been also applied to *O. mascula*, but in an article in the *Gardeners' Chronicle* for 1847 a correspondent assumes this to be *Potentilla anserina* or Goose grass. On examination of the several parts of



FIG. 52.—GATTON PARK: THE UPPER FISH POND.
(See p. 161.)

glossum eximium King of the Belgians, *O. Amethyst* Glebelands variety, *O. illustrissimum* W. R. Lee's variety, *O. Dora*, *Oncidium corynephorum*, *O. Leopoldianum* and other Orchids.

INDIGENOUS SPECIES.

THE greater number of indigenous Orchises are English rather than Scottish plants, though both *O. mascula* and *O. maculata* are abundant in some parts of Scotland. The Madeira *O. foliosa* is by far the handsomest of the genus, in suitable conditions throwing spikes 3 feet in height; but I have not found it to increase to any extent. And indeed from what I have observed of *O. mascula* and others it is notable that Orchises are largely propagated naturally by means of seeds. The most amenable to ordinary

entirely, they only become more numerous in the new positions than in the old. All grow best in a cool, moist loam, and it is quite easy when lifting selected plants to secure every root, provided transplanting is not too long delayed after flowering. Superfluous vegetation removed with the Orchids should be left till the plants have become re-established, otherwise numerous seedlings of minute proportions would be destroyed. Hence the importance of leaving the surface undisturbed.

In folklore, Orchises are very interesting plants, and *O. mascula* supreme in interest. Along the coast of Berwickshire, where this species grows abundantly, it used to be named Deadman's Thumbs, and *O. mascula* and *O. latifolia* Deadman's Fingers, from the shape of the

the plant, tubers, leaves, spikes and flowers, one is surprised to find how observant these must have been who have originated one or other of the numerous names by which the plant is or has been known. For the first named there is the common Adam and Eve, Dead Man's Thumb, Ballock Grass, Beldairy, Dagstone, etc., Salep and Man Orchis. The leaves give occasion for the word Gethsemane, Adden's Grass, Butcher's, etc. The stalk supplies the name Keatlegs, and the flowers give a large number, mostly variants of a few. Such are Cock's Kames, Cuckoo Flower, Paddock's Spindle and Spreespinkle, the real name in many instances, as in some of those quoted, being hidden by the encrustations of verbal lapses during the course of many years. B., East Lothian.

NOTES ON IRISES.

SPECIES OF BEARDED IRISES.

AFTER reading Mr. A. J. Bliss's article on Bearded Iris species on p. 37, there are one or two points to which I should like to draw attention.

The first is that *I. aphylla* is only a name that covers a considerable number of local forms, of which we should perhaps have known a little more if this great war had not broken out. At the end of last July I was just on the point of starting on a journey, which would have taken me to the homes of many of the forms of this widely-distributed Central European species. My plan was to go south from Berlin through the Harz Mountains to the neighbourhood of Halle, and then on into Northern Bohemia, all districts in which forms of *I. aphylla* are found. From there I intended to make my way to Breslau and Southern Silesia, and then through Galicia and over the Carpathians into Hungary, where *I. aphylla* is found in the north in the Tokai district and also in the south-east in Transylvania; but the prospects of making such a journey in the near future do not seem promising. Meanwhile, we can only remember that among the various forms of this Iris there are innumerable variations in colour and shape, and in that coloration at the base of the growths on which Mr. Bliss lays stress. Early this year there came up in my garden here many shoots of a form of this Iris from *Ermihalyfalva*, in Hungary. The deep, purple-violet tips of some of the young shoots were really an astonishing sight, and these plants now retain their deep colour at the base. Others were less deeply coloured, while a few were wholly green.

As far as I can see, this colour at the base is a character unconnected with any other character, and occurs both in this species and in *I. variegata* in the most capricious manner. It would doubtless be interesting to investigate the question by breeding experiments begun with wild plants from known localities and not with the garden forms with which Mr. Bliss has conducted his interesting experiments.

I. aphylla also varies very much in the colour and appearance of the beard, and I cannot believe that in the present state of our knowledge of the species it is safe to draw any conclusions as to the probability or possibility of any particular type of beard appearing or not appearing among seedlings of *I. aphylla*.

The colour of the beard of an Iris appears to be a most untrustworthy character. The best example is in *I. stolonifera*, where some specimens have beards of bright yellow and others of a brilliant electric blue. Unfortunately, the colour seems capable of changing in the same plants from year to year, and is often a compromise between the two extremes, being blue in front and yellow further back.

On the contrary, I have known instances where the crossing of a blue, with a yellow beard produces a beard of a brownish tinge.

We must hesitate, I think, to accept Mr. Bliss's suggestion that *I. albicans* is not merely an albino, but a hybrid of *I. Madonna*. I can hardly believe that he would make the suggestion if he knew *I. Madonna* or if he had grown the two plants side by side for several years. They are identical except in colour, and moreover, it is hardly likely that hybridisation with another species should have taken place in so remote a neighbourhood as the top of a mountain in the Yemen district of Arabia. Specimens of the two plants, gathered there nearly a century ago, still exist in the Paris herbarium.

Another point which we must not forget is the difficulty of saying that any particular plant is the type of *I. pallida*. I feel certain that I could show Mr. Bliss specimens of *I. pallida* from known localities, some having "hanging" falls and some in which the blades extend almost

horizontally. Foster's dark-reddish form from Monte Brione has spreading falls, and I only wish Mr. Bliss could have been with me on a memorable afternoon when, on a rocky cliff not many miles from Ragusa, on the Dalmatian coast, I found many thousands of specimens of *Iris pallida* varying in colour from deep violet or blue purple through pink or reddish-purple shades to pale mauve and even white. From Bozen I have two *pallidas*, of which one has spathes of silvery white, while in the other the spathes, though entirely scarious, are of a pale brownish tinge. Both these again are different

regularly we might expect to find "*dalmatica*" in Albania or even as far south as Mount Taygetus, in Southern Greece, where I have reason to believe some fine Irises exist.

It can hardly be allowed, therefore, that *I. pallida* is "certainly homozygous" for the character of "hanging" falls.

Another point which makes it difficult to follow Mr. Bliss's argument is that there are several white *germanicas*. The so-called *I. florentina* is the best known, and its dark, black-purple counterpart is used near Florence for the manufacture of Orris root, along with a *pallida*

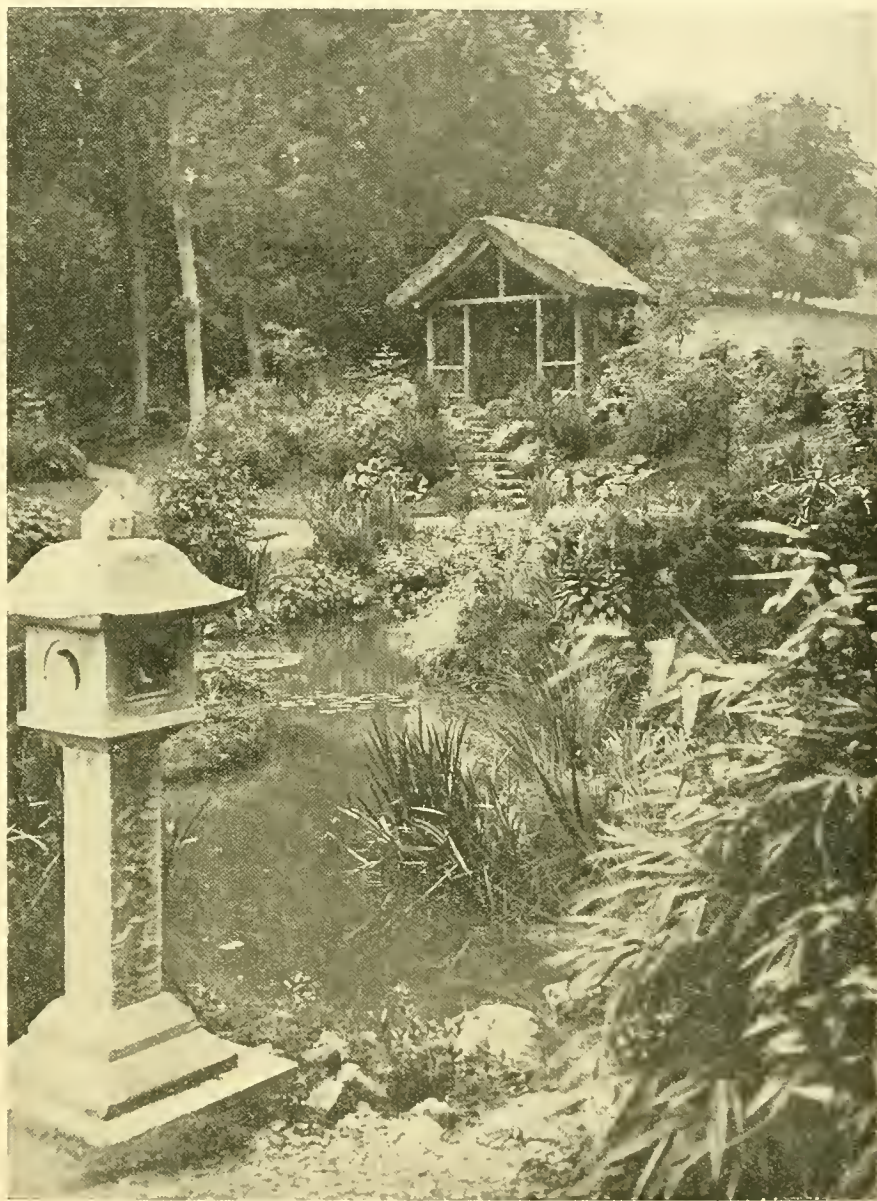


FIG. 53.—GATTON PARK: WATER GARDEN WITH JAPANESE STONE LANTERN.

(See p. 161.)

to forms from Riva and another from Como, while I have myself found others at Bollünz and Popecchio to the south of Trieste, on Mount Veljun in Croatia, and on the Velebit Range further to the south. The differences are endless. Some have green and some glaucous leaves, while in some there is a distinct pink tinge at the base of the leaves.

The so-called *I. pallida dalmatica* has widely spreading falls, but I am inclined to doubt whether the plant is a native of Dalmatia. From Trieste to Ragusa the forms of *pallida* increase in size and vigour, and if the increase continues

and, strange to say, *albicans*, while "*florentina*" itself seems unknown there. The variety *atropurpurea* has a white counterpart that grows freely on the castle hill of Beaucaire, which faces Tarascon across the Rhône, while I have two others, of which I have no purple counterparts, one from Metkovic at the mouth of the Nerenta, and another with a white beard that I found growing in a wayside garden at Matuglie on the way up from Fiume to Monte Maggiore. The last is, I think, the finest, and differs from all the others by having an almost entirely white beard.

Once again this year both *I. albicans* and *Madonna* have failed to mature any seeds in the pods they had formed, and I am as far as ever from knowing whether these two interesting plants will reproduce themselves unchanged from seeds as I should expect them to do. Mr. Bliss's seedling of *albicans* × *macrantha* does not surprise me in the least, if we may assume *macrantha*, as other forms of *germanica*, to have sprung from *I. aphylla*. Some forms of the latter have flowers of a pale pinkish purple, and I have also a form of *I. germanica* from the Greek island of Cephalonia, which has flowers of a distinctly pinkish purple. The combination of the white of *albicans* with the reddish purple which occurs in *I. aphylla* would give a "pale rose-mauve," while the yellow-tipped beard of *albicans* would combine with the blue of *aphylla* to give the "brown-tipped" beard.

It seems, indeed, that the more we learn of the infinite variety to be found among local forms of the known species of *Iris*, the more reluctant we shall be to accept Mr. Bliss's theory of the existence of an unknown species, presumably in Europe or at any rate on the shores of the Mediterranean, which has hitherto escaped the notice of collectors in the field and of which no trace appears to exist in any of the great herbarium collections.

The interesting question is at once raised as to whether it is possible to start with hybrids that are probably the outcome of several generations of hybrids—for this appears to be the parentage of most of our garden bearded *Iris*es—and by means of breeding experiments to get back to the types of the species between which the original hybrids were made artificially or occurred in nature. Approaches to the wild plants may undoubtedly be obtained, but do we ever get typical plants in which there is no trace of more than one species? From my own experience I am inclined to doubt it. W. R. Dykes, *Charterhouse, Godalming*.

THE MARKET FRUIT GARDEN.

AUGUST in my district was an exceptionally dry month, the numerous heavy falls of rain which visited most parts of the country not having extended to this place. The only considerable falls in the month occurred on the 15th, when the measurement was 0.26in., and on the 29th, when it was 0.39in. No rain of any consequence fell during the rest of the month, the total for seven rain days being 0.81in. For hoeing and fruit-picking the dry weather was suitable, but it was not helpful to the swelling of Apples, so that the fall on the 29th was welcome.

MARKETING PLUMS AND APPLES.

Up to the end of August no serious glut in Plums or Apples occurred, although one in the former fruit was expected. It is true that the supply of Evesham and Pershore Egg Plums was excessive, and that prices towards the end of last month were low, but they have often been lower, while other varieties made much better prices than those of last year. As for Apples, the generally small or otherwise inferior fruit made more than was obtained for excellent samples last season. If retailers had been more moderate than they were in the prices they charged to consumers, the demand for Plums, in all probability, would have been well up to the supply, as jam manufacturers wanted large quantities, and the crop, except in Evesham and Pershore, was irregular and below average on the whole. By way of example, Victoria Plums in the last week of August were ticketed at 5d. per pound in several shops in the town where some of my Victorias, an excellent sample, were sold at 3s. per half-sieve of 28 lb., or at less than 1½d. per

pound, in the same week. Since then Victoria Plums and Apples have fallen in price.

AN UNDER-RATED PLUM.

The Gisborne yellow Plum always sells at 6d. to 1s. per half-sieve less than the Victoria, although many people agree with me in ranking the former above the latter for puddings or jam. A handsome appearance counts for more than flavour with consumers in relation to Plums as well as to Apples.

SIZES OF APPLES.

In my orchards comparatively few late Apples seem likely to attain their full size, while early and mid-season varieties have mostly been small. Packing has been depressing work, on account of the immensely large proportion of tail, only fit for pigs. In the case of dessert fruit even thirds have sold fairly, still leaving large quantities which one was fortunate to get hawkers to take at nominal prices. With cookers the loss was much greater, as no one wants tiny Apples of this class. The outlook for Lane's Prince Albert is quite distressing. An enormous superfluity of fruit was set, and I had it thinned twice, but the foliage was so badly injured by the aphids that the trees lack vigour for perfecting their fruit. Probably the drought of the latter part of May and nearly the whole of June stunted Apples in the first instance, while bitterly cold wind injured much of the foliage where aphides did not infest it. My best fruit is on my oldest trees; fifteen years from the planting, presumably because, their roots being deeper than those of younger trees, they suffered less from drought, while they were also less injured by the aphids. The only varieties which have attained or promise to reach their normal size are Warner's King and Royal Jubilee on young or old trees, and Bramley's Seedling, Newton Wonder, Lord Derby, Charles Ross, Cox's Orange Pippin, Bismarck, and Chelmsford Wonder on comparatively old trees. Even fruits of Bramley's Seedling on trees planted seven years ago appear unlikely to swell sufficiently, and those of Allington Pippin will be smaller than usual. As a rule, young trees produce the finest fruit, but drought and aphides have rendered the present season exceptional in this connection.

THE MYSTERIOUS APPLE DISEASE.

In August, on page 96, allusion was made to an Apple disease new to me, as having attacked Worcester Pearmain somewhat extensively. Specimens were sent to the Board of Agriculture, and to Mr. E. S. Salmon, of Wye College, and, by request, further specimens to the Royal Gardens, Kew, to which place those sent to the Board were forwarded. Both the Kew authorities and Mr. Salmon agree in attributing the main, if not the only, cause of the injury to a *Fusarium*, the particular species of which cannot be identified at present. Mr. Salmon hopes that the identity may be obtained when the fungus reaches the necrotic stage. At present the Kew verdict is that the fungus on my specimens differs in appearance from that of any one of the four species of *Fusarium* known to attack the Apple. The Kew report states that other fungi present were *Monilia fructigena* (the conidial stage of *Sclerotinia fructigena*, or brown rot), *Botrytis cinerea*, and *Fusicladium dendriticum* (the conidial stage of *Venturia inaequalis*, or scab). But it is easy to imagine that the spores of any fungus flying about among the trees could find a lodgment on the rotten portion of an Apple, and not one of the three fungi just named causes the form of damage noticed. Moreover, there was no scab or brown rot on the fruit of Worcester Pearmain. My impression is that insect injury, probably that done by aphides, with which the trees were densely infested, opened wounds to which the fungus originating the injury found access. No one to whom a specimen has been sent, including the Kew authorities, Mr. Salmon, Mr. W. F. Emptage, and a friend who grows Apples extensively, appears to have seen the particular form

of injury before. Hundreds of specimens were found on Worcester Pearmain, but only two or three have been noticed on Cox's Orange Pippin and one other variety.

GREEN MANURING FOR FRUIT TREES.

The heavy expense of hand hoeing frequently and digging annually among Apples and Plums, and of dressing the orchards with farmyard or London manure periodically, and digging it in, makes one disposed to try an adaptation of the American green manuring system. In the United States green crops are grown in orchards, and ploughed in, but my plan would be more akin to what is there called the sod-mulch system, although I should not grow grass. My idea is to grow Lucerne, cutting it as often as necessary, and letting the cut stuff lie to rot on the ground as manure. Lucerne is a perennial and a nitrogen-accumulating plant, two essentials of my plan. If the land could be got clean before the end of April, and the Lucerne were sown thickly, there would not be much chance for weeds to re-establish themselves, and my impression is that the crop would not have the dwarfing effect which grass has upon tree growth. On the contrary, the steady accumulation of nitrogen should stimulate growth. The chief difficulties anticipated are in connection with such operations as spraying and Apple thinning. Winter spraying would be done before the Lucerne had started into growth, and any later spraying would have to be deferred until after the first cutting of the crop. Apple thinning would not be done until some time after the first cutting, but it might cause the trampling of the second growth of Lucerne. The second cutting would need to be done before the gathering of Apples or Plums, and it is uncertain whether a third cutting would be necessary. There would be a third crop, but possibly it might be left to be killed by frost. Each cutting would cost less than half the expense of hand-hoeing, and, of course, there would not be any digging or manuring to pay for. The plan could not be pursued so long as Gooseberries or Currants were growing among the fruit trees, but only after these had been dug up. It is my intention to try the plan on a few acres next season, if the land can be cleared of weeds in good time. There is no doubt that the accumulated mulch would be a preventive of injury to the trees by drought. Possibly, however, it might prove a favourable nursery for hibernating insects and fungi. Another drawback is that fowls could not be kept in the orchard after the Lucerne crop had started in growth for the season, but only for the winter half of each year. A *Southern Grower*.

PLANT NOTES.

KAEMPFERIA ROSCOEANA.

WHEN recently on a visit to a friend's garden I noticed *Kaempferia Roscoeana* in bloom. This was extremely interesting, because it is only on rare occasions that one meets with any of the *Kaempferias*. The plant under notice has variegated leaves which are somewhat round and flat, being quite close to the rim of the pot, while the white flowers are few and stand just above the foliage. It thrives in the ordinary potting compost, and forms a tuber similar to that of some other members of the *Scitamineae*. During the growing season plenty of water is needed, and directly the leaves turn yellow the supply is reduced gradually, and finally withheld when the plants drop their foliage. Throughout the resting period the plants are stored under the stage, where they can be kept dry in the same way as *Gloxinias*. When growth commences in the spring the tubers are shaken out and re-potted in fresh compost and grown in a warm house. *K. Roscoeana* is a native of Burma and was introduced in 1827. B.

NOTICES OF BOOKS.

FLORA OF THE MALAYAN PENINSULA.

No. 25 of King and Gamble's *Materials for a Flora of the Malayan Peninsula* contains the Cytinaceae (Rafflesiaceae) and the Balanophoraceae, by H. N. Ridley, and the Juglandaceae, Myricaceae, Casuarinaceae, Fagaceae, and Salicaceae by the surviving editor, Mr. J. S. Gamble. The root-parasites described by Mr. Ridley are:—*Rafflesia Hasseltii*, *Bragmansia Lowii*, five species of *Balanophora*, and a distinct new type, referred to *Rhopalomenis*. Two of the species of *Balanophora* have not been recorded outside of the peninsula, but the rest are regional, extending, jointly, to Sumatra, Java and Cochin China. *Balanophora insularis* was first found in Christmas Island, a small island about 200 miles south-west of Java, and has since been collected in two localities on the peninsula. The present distribution, so far as known, of these tropical forest root-parasites is very peculiar; but Mr. Ridley could doubtless tell us much more than appears in his present contribution to the subject, as he has personally collected specimens of the eight species he here describes. The Fagaceae, or Cupuliferae, constitute an important element of the forests of the peninsula. Mr. Gamble describes three species of *Quercus*, thirty-five of *Pasania* (formerly regarded by most botanists as a section of *Quercus*), and thirteen of *Castanopsis*. Most of these Fagaceae are large timber trees, inhabitants of the dense forests, from sea level upwards. *Salix tetrasperma*, the only Willow, widely dispersed in India, China, and the Malay Archipelago, also descends to the coast region. W. B. H.

SCHOOL GARDENING.*

This is an admirable little book and deserves to have a wide circulation, not only among the school gardeners for whom it is written, but also among young gardeners of all kinds. The writer combines in an unusual degree a knowledge of garden practice with a power of imparting it, and, thanks to these gifts, he has been able to make of his little book something far more valuable than the usual collection of scrap-exercises.

As an example of his power to pick out striking and useful points for teaching purposes, we may cite the exercises and illustrations (figs. 9 and 10) showing the effect on plant-growth of the addition of small quantities of humus to ordinary soil, sand or sub-soil.

Again, his description of how to use a spade is terse and excellent, and we should like to see it applied not only by the children but by all garden labourers.

Indeed, it is not too much to say that a youth who had worked through the exercises contained in this book would have mastered the essentials of sound garden practice; for although of necessity the instructions are brief, they generally succeed in emphasising the essential points. Here and there a little more space might with advantage have been given to the vegetable crops, and some advice given as to the use of the crops; for relatively few cottagers make the fullest use of the vegetables they grow so well. How many know, for example, that Lettuce is one of the best of cooked vegetables? Or that Chicory, which grows like a weed on poor soils, may be planted thick, and the thinnings used for an early summer dish of a green vegetable as good as or better than any Cabbage? In the hands of an energetic and practical instructor, however, the book will be of inestimable value, and many a youth will leave school imbued with an enthusiasm for horticulture which will remain with him long after the impressions of other less absorbing studies have faded from his mind.

* *A First Book of School Gardening*. First Books of Science Series. By Alexander Logan. Pp. 151. (Macmillan & Co.) Price 1s. 6d.

WEST INDIES.

THE ORIGIN OF WEST INDIAN ECONOMIC PLANTS.

In the *Agricultural News*, which is one of the official publications of the Imperial Department of Agriculture for the West Indies, there is an article on the "Origin of West Indian Economic Plants and Animals." The writer says: "It is difficult to find anything more characteristically West Indian than the circumstance that nothing is indigenous. By considering the origin of cultivated, and even wild plants; of domestic animals, and even man himself, with his attendant culture, we readily discover that the great majority of forms were more or less recently introduced from abroad. In no other country is such a pronounced condition of affairs to be witnessed, and to designate the Lesser Antilles a land of exotics would in no sense appear an exaggeration.

"The information in this article has been selected principally to show the exotic origin of some of our most important crops, domestic animals and pests. A consideration of the sources from and agencies through which they have been

This navigator was responsible for the introduction of the familiar Bread-fruit tree. Commissioned at Mauritius (to which the tree was brought from its native home in Java), Captain Bligh's first attempt failed owing to the mutiny of his crew; but the second voyage was successful, and in January, 1793, he landed 153 plants in St. Vincent, whence the species has spread into most parts of tropical America.

"An even more familiar tree is the Coconut Palm; but this is also an exotic, although it may now be regarded as growing wild in most parts of the West Indies. The original home of the Coco-nut was believed by De Candolle to be the Indian Archipelago. There is no doubt that it was established on the continent of America long before it found its way to the West Indies. In connection with this the attention of the reader may be called to the United States theory of the Central American origin of the Coco-nut. This is supported by Willis, and is probably the correct origin. Amongst vegetables the Yam and Sweet Potato are South American, and several important fruits like the Banana and the Lime came from Asia. As a matter of fact, if one considers the Geological age of the West



FIG. 54.—GATTON PARK: POOL IN THE ROCK GARDEN.

(See p. 161.)

obtained will form the subject of a later article. Taking first the case of plants, we naturally commence by considering the origin of the Sugar Cane. This plant is so classically a West Indian cultivation that many persons unconsciously regard it as indigenous. Botanically it is a native of India or Southern Asia; that is to say, it has been found there growing wild. In the Middle Ages it was introduced by the Arabs into Egypt and Spain. Thence it was taken to the Canaries and Madeira, whence it was introduced into Brazil in the sixteenth century. From Brazil it was brought to the West Indies about the middle of the seventeenth century, and from that time onwards has been the staple cultivation.

"The economic plant in the West Indies which ranks next in importance to the Sugar Cane is Cacao. This plant, though a native of the New World, is not indigenous to the West Indies, though it is said to grow wild in Trinidad. Its original home is in the forests of the Amazon and Orinoco. This refers to the common species, *Theobroma Cacao*. The other species are indigenous to various other parts of tropical America. Considerable romance in the West Indies attaches to the name of Captain Bligh.

Indian Islands, which corresponds to the Pliocene of other countries—a comparatively recent formation—one realises how limited has been the time for any evolutionary changes to produce an indigenous flora. To show the extent to which introduced plants may take possession, reference may be made to two Barbadian species, namely, the little yellow-flowered *Wedelia buphthalmoides*, and the well-known Australian tree *Casuarina*. The former, it is said, was introduced by a lady for her garden, but eventually some seeds escaped, and now this species forms characteristic carpets, having ousted several older inhabitants in the struggle for existence. *Casuarina*, the tree, has been equally successful in adapting itself to Barbadian conditions, and can be found growing in nearly every situation on the coast as well as inland.

"In a general way the West Indies may regard with satisfaction their varied and valuable flora. In India during recent years there has been a tendency to attach less importance to the introduction of species. In the West we cannot afford to adopt this attitude, first because of the strictly limited number of indigenous forms, and secondly, because we have for so long derived such immense benefit from introduced species."

The Week's Work.

THE ORCHID HOUSES.

By T. W. BRISOR, Gardener to W. R. LYSAGHT, Esq.,
Castleford, Chepstow, Gloucestershire.

MILTONIA VEXILLARIA.—Plants that flowered early in the season will commence to grow during August, when the work of repotting may be done. A great depth of soil is not required, and the compost should not be pressed tightly. A suitable rooting medium consists of a mixture of Osmunda-fibre, peat, Sphagnum-moss, and half-decayed Oak leaves in equal parts. Cut all the materials into moderately fine portions, and separate all the finer particles by passing the compost through a sieve. Large plants which are showing signs of exhaustion should be thoroughly overhauled. Their dead roots and back pseudo-bulbs, excepting two or three behind each lead, should be cut off. These detached growths may either be potted separately in well-drained pots or arranged several together to form specimens. From now onwards the plants should be grown in a position near the roof-glass of the intermediate house, and must be moderately supplied with water until the roots are growing freely. *Miltonia Bleuana* and *M. Ilyeana* with several other hybrids may be treated in the same manner and grown with *M. vexillaria*, but, owing to the irregular manner in which they produce their flower scapes, it may be necessary to repot them at other seasons. *M. Roezlii* and its variety *alba* require a few degrees more warmth than the others, but in other respects the treatment should be the same. All the *Miltonias* referred to are best repotted annually.

MASDEVALLIA.—After the *Odontoglossums* are repotted, *Masdevallias* may be attended to, but there is no need to disturb plants that were repotted in February of this year. The larger growing kinds, which include *M. Veitchiana grandiflora*, *M. ignea*, *M. coccinea* with its numerous varieties, and *M. macrura*, need larger receptacles and less drainage material than the smaller species. Those named grow strongly, and healthy plants have a large number of roots, which need generous treatment, in regard both to soil and water. The dwarfier species, which may be grown in well-drained pans, include *M. Wageriana*, *M. melanopus*, *M. picturata*, *M. Arminii*, *M. tridactylites*, *M. caudata*, *M. rosea*, *M. polysticta*, *M. Estradae*, *M. sinula*, *M. ionocharis*, *M. Schroederiana*, and *M. Gairiana*. All the plants of this section may be suspended from a wire stretched along the roof rafters, for they thrive best near the roof-glass. Moreover, the plants may be examined minutely and their requirements attended to conveniently when grown in this way. Certain species, such as *M. nidifica*, *M. muscosa*, *M. Schlimii*, *M. maculata*, and *M. infracta*, flower in the autumn, and the repotting of these should be postponed until their blooming is over. Those of the *Chimaera* group also should not be disturbed now but attended to in the spring, and the pure white *M. towarensis*, which produces its flowers during the winter, should not be repotted at present, unless the soil is in a sour state, when it is advisable to replace it at once. The flowering period of all *Masdevallias* should be determined, and spikes that are produced at other times removed directly they appear. All *Masdevallias*, with the exception of those of the *Chimaera* section, which require a few degrees' more warmth during the winter months, may be grown at the warmer end of the cool or *Odontoglossum* house. They are injured by much heat and excessive sunlight, and, like the popular *M. vexillaria*, enjoy an equable temperature throughout the year. When it is decided to repot, the plant should be cleansed—an operation necessary at least once a year. Healthy specimens may be placed in larger pots or pans without much disturbance, but specimens that have become leafless in the centre should be overhauled and broken up. Cut away the portions without foliage, and place the remaining pieces in pots just large enough to accommodate them for one season. When plenty

of roots have formed the plants may either be potted on, or several arranged together to make large specimens. The compost should consist of a mixture of good fibrous peat or Polypodium fibre, partly decayed Oak or Beech leaves, and Sphagnum-moss in equal parts, with a moderate sprinkling of crushed crocks. Half fill the pots or pans with drainage material, as *Masdevallias* are not deep rooting subjects. Make the soil moderately firm; in the case of the stronger kinds the compost should be level with the rim of the receptacle, but it should be made slightly higher in the centre for the lesser species. Give the compost a good watering, but it must not be kept saturated or the leaves will drop. Shade from strong sunlight until the plants are well established, and spray them lightly overhead on bright days. Keep the surroundings moist by damping the stages and bare spaces whenever they become dry. If "black spot" appears on the leaves keep the atmosphere drier, and ventilate freely; the temperature must not fall below the normal when the atmosphere is heavily charged with moisture. There are a few other genera, such as *Pleurothallis*, which will thrive under the same conditions as *Masdevallia*. *Restrepia maculata*, *R. antennifera*, and *R. striata* are also of this class, and should be grown in shallow pans suspended from the roof rafters. The quaint *Stelis* should be treated similarly to those described.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME,
Warter Priory, Yorkshire.

LILIUM CANDIDUM.—The *Madonna Lily* will not succeed in all gardens out-of-doors, but there is no trouble in growing the plants in pots indoors, where they will flower over a long season. The bulbs should be potted directly the stems decay, which occurs soon after the flowering is over. Bulbs imported from France flower the first season provided they are potted at the proper time, but afterwards they are not equal to healthily grown English bulbs. Stand the plants outside for some weeks, and, as the winter approaches, remove them to a cool house or pit, where protection is afforded from rains.

CLERODENDRON FALLAX.—Seedlings of *Clerodendron fallax* raised from seed sown last spring will shortly be in flower, and may be removed to a cool, dry house. Later plants should be afforded the same careful treatment as those of the earlier batches. A few of the best plants should be set aside in a cool, dry house for seedling; they will afterwards be useful for flowering early next spring.

ABUTILON SAVITZII.—Plants of this *Abutilon* raised from cuttings inserted last spring should be grown in a light position, and allowed plenty of room to develop. They will furnish useful plants for autumn decoration. Cuttings may still be inserted for raising small plants to be grown in 3-inch pots. Older plants which have been grown as tall specimens on single stems should be fed with weak liquid manure at regular intervals.

POTTING LOAM.—A supply of loam from a pasture should be procured and stacked, grass side downwards, in a large heap made with sloping sides. If stacked in this way, with a sprinkling of lime between each layer, it will mellow and be ready for use next spring; if the soil is poor in quality, pour liquid manure over the heap.

SEED-SOWING.—Seeds of a large number of subjects may be sown with success in September for early spring and summer flowering. Sweet Pea, *Antirrhinum*, *Clarkia*, *Celsia*, *Godelia*, *Larkspurs*, *Mignonette*, *Schizanthus*, *Thalictrum*, and *Viscaria* may all be sown now. The seedlings should be transferred to small pots as soon as large enough for transference, and wintered in a cold house or frame, where they can be kept free from damp and brought on in batches, according to requirements.

INSECT PESTS.—Earwigs have been unusually plentiful this season, and measures must be taken to see that they do not destroy the buds of *Chrysanthemums*. Earwigs may be caught in the dried, hollow stems of Broad Beans placed among the foliage of the *Chrysanthemums*. The portions of the stalks should be about 8 inches long. When the earwigs are trapped, it is an

easy matter to blow them into a jar of insecticide. *Quassia* extract used at short intervals will kill aphides and render the foliage distasteful to all leaf-eating insects. If rust disease is present on *Chrysanthemums* spray with liver of sulphur once a week or once a fortnight—using 2 oz. of liver of sulphur in three gallons of water.

GENERAL REMARKS.—Work in the glass-houses generally will not be so pressing as during the past few months. The opportunity may be taken to wash the woodwork and glass thoroughly or to repaint if necessary; the plants themselves should be rearranged, and all undesirable specimens discarded to make room for others. Many cuttings need to be inserted, and late batches of plants, such as *Primulas*, potted, but large pots should not be employed at this late season. The heating apparatus should be examined for leakages and other faults, and put in order for the winter. Water should be drawn from the boilers, the latter thoroughly washed out, and all air tops pat in good repair.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton
Park Estate (the Rt. Hon. LORD ROTHCHILD), Buck-
inghamshire.

WALL FRUITS.—Certain kinds of wall trees grow luxuriantly late in the season, and a difficulty may be experienced in getting the wood ripened. To assist in maturing the shoots, remove all foregoing growths on Apple, Pear, Plum, and Cherry trees at once, and thin the shoots on Peaches and Nectarines.

FRUIT ROOM.—The fruit room should be got in readiness for use; most kinds of fruit are improved by placing them for a few days on the shelves in the fruit room. See that the walls and staging are perfectly dry before bringing the fruit in the store, which should not be warmer than 55° or colder than 40°. This range of temperature is sometimes difficult to maintain, but the room may be kept cool and dry by ventilating it freely. Great care and attention is necessary in gathering fruits intended for keeping, for if gathered too soon they will shrivel, and if allowed to remain on the trees after a certain stage will not keep well.

BUSH FRUITS.—Gooseberries, Currants, or other bush or dwarf-trained trees that show signs of deterioration should be uprooted and destroyed, for if the ground is cleared of worthless bushes early in the season opportunity is afforded of making it ready in advance for replanting. Ground in which Gooseberries, Currants, and Raspberries are to be planted should be well manured beforehand, unless it is in a suitable condition already, when mulching after planting will suffice.

MULBERRIES.—The fruits, which are very fine this season, are ready for preserving. Unless the trees are planted on grass land, mats, sheeting, or tiffany should be placed underneath them to prevent the fruit becoming damaged by falling upon the ground. As a rule, Mulberries are not all ready to gather at one picking, and, like Raspberries, will not keep for any length of time after they are gathered.

COB NUTS AND FILBERTS.—Some of the earlier varieties of nuts are ready for gathering. Spread them thinly on the floor of a dry, airy shed, or on mats out-of-doors, to dry before being placed in the store room. It is the practice of some to remove the nuts from the husks and store them when quite dry in boxes or baskets—the latter for preference.

GENERAL REMARKS.—Although it is not quite time to undertake the work of planting, lifting, and root-pruning, much may be done now to expedite matters later. Material for drainage, soil, manure, wood ashes, stakes, indeed, everything necessary for the work, may be got in readiness. Examine the stakes or supports in the Raspberry plantations, and those to which young standard or other trees are tied, and replace any that are defective. Hoe the surface of the ground, destroy all weeds, and make everything neat and tidy. It is advantageous to both buyer and seller to select and order trees early. See that early varieties of Pears are gathered before they become over-ripe. Lightly pick up the surface of fruit borders—especially those near walls—that have become hard from constant treading.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINTHOGH, Hopetoun, South Queensferry, N.B.

CUCUMBERS.—Now that the days are shorter Cucumbers will be less productive. In these circumstances it is advisable to reduce the crop considerably, first removing all badly shaped fruits. Keep the trellis well furnished with young growths, but guard against overcrowding, which would defeat the end in view. Add a little rich loam to the bed as a top-dressing, and from now onward use tepid water at the roots. A little air may be admitted from the top ventilators on fine days. As the season advances syringe the plants less frequently, and only in the mornings. The night temperature should be 70° to 75°.

MELONS.—Plants with fruits approaching the ripening stage require very careful attention at this season. Syringing should be entirely discontinued, and on the first signs of the fruits ripening reduce the supply of water to the roots gradually. The atmosphere must be kept dry, and a little fresh air admitted through the top ventilators at night. The fruits on the latest plants are swelling, and it may be necessary to hasten their development before the sun loses power. Maintain a night temperature of 70°, and allow the thermometer to rise to 85° by sun-heat before admitting air. Close the house in the afternoon to husband the sun's heat, and damp the floors and walls to promote atmospheric moisture. Add a small quantity of loam and manure to the border as a top-dressing, and later on feed the roots with liquid manure and fertiliser. Pinch all laterals as they appear, and watch carefully for the slightest signs of the fruit cracking, which often results from a close atmosphere.

STRAWBERRIES.—The weather of August was favourable for the development of the crowns, and the earlier plants are making good progress in their pots. It is important that each plant should have sufficient space for the development of the foliage. Later plants should be fed with weak liquid manure at alternate waterings. Where it is found necessary to shift the plants to new quarters, first dust the ground liberally with soot. Runners and side shoots should be pinched off closely and weeds destroyed as they appear. Stir the surface of the soil with a pointed dibber to allow the air to enter, and see that the plants do not suffer from want of moisture at the roots.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

HARDY ANNUALS.—If it is desired to have hardy annuals in flower early next year, seed may be sown now, and during the next fortnight, according to whether the district is early or late. For the seed-beds select soil that is not of a very rich nature, and sow thinly. The plants must be well thinned, so that those left may grow sturdily, and thus be better able to withstand the cold of winter. Suitable annuals for sowing now are: Candytuft, Cornflower, Clarkia, Larkspur, Lupin, Godetia, Eschscholtzia, and Shirley Poppy. Sweet Peas may also be sown this month, though autumn sowing out-of-doors is not much practised, owing to trouble with slugs, and danger from excessive wet and cold. Ground that has been well manured for a previous crop is best for autumn Sweet Peas, and if it is dry should be well watered before sowing. Trap slugs by sprinkling bran as a bait on one side of boards, and lay them, bran downwards, close to the rows.

LAWNS.—Mow the lawns regularly and trim the edges to maintain a tidy appearance. Bare or worn patches on lawns may be renovated by sowing seed of suitable kinds. First loosen the surface, then sow the seed thickly, and roll the turf. In the wild garden, or where bulbs are naturalised, grass should be cut once more with the scythe. This will facilitate the planting of more bulbs if desired, or other working operations.

BULBS.—The bulb order should be sent at once, so that the bulbs may be at hand for planting as time and soil conditions permit. At present the turf is too hard and dry to use a bulb planter

or spade, but beds or borders may be planted with Narcissi, May-flowering and Darwin Tulips, and English and Spanish Irises to furnish cut blooms. Prepare the ground in advance; dig deeply, and incorporate well-rotten manure in the bottom spit, sufficiently deep for the roots of the bulbs not to come in direct contact with it. Bone meal is very beneficial, and may be used freely. Plant in rows sufficiently far apart to permit of hoeing between them.

VIOLETS.—The weather of July and early August was ideal for Violets, and the plants made splendid growth. If the work of watering, feeding, spraying, and weeding was attended to, the plants should possess strong flowering crowns, which are of first importance for the production of a good supply of blooms throughout the winter and spring. It is time to transfer the plants to cold frames, previously prepared with a bottom layer of long stable litter or leaves well trodden down, and covered with about 9 inches of good, open soil. Soak the roots with clean water the day previous to planting, then they will lift with plenty of soil attached to them. Remove runners and plant firmly, arranging that the tops of the leaves will be within a few inches of the glass eventually. Water to settle the soil, and spray the plants several times daily; the lights must not be placed in position for fully a month from now.

THE "FRENCH" GARDEN.

By P. AQUATIAS.

MANURE BEDS.—Celery and Carrots have grown luxuriantly during the past six weeks. The work of thinning Carrots has required more attention than usual, whilst the blanching of the Celery has been a difficult matter, owing to the tendency of the plants to decay when covered with mats during damp weather. After the beds have been cleared the old manure should be forked over at intervals of a fortnight to supply the necessary quantity of black soil for the rearing of Lettuces in their winter quarters. When breaking up the old manure beds it is advisable to reserve sufficient space for sowing Lettuces, as this crop will thrive much better on these old beds than in other parts of the garden.

CROPS IN THE OPEN. Cauliflowers are almost over. This crop has proved more remunerative than of recent years, because of the irregular supply of this vegetable from the Continent, and the damage by frost to the plants set out in March and April. Such tender varieties as Snowball and Early Erfurt have been failures in the open, though they gave excellent heads when grown on hot-beds or in cold frames. The variety All-the-Year-Round has been a great success in the open, and the plants were remarkably sturdy and hardy. The inflorescences were of splendid quality, but rather too large for the average customer, and the heads had to be cut before they emerged from the central leaves. Kidney Beans sown late in April in frames and under cloches were favoured by the fine weather in June. They yielded splendidly from the middle of that month until early in September, and were very remunerative. Vegetable Marrows set at the same period in cold frames produced an excellent crop. They cropped well during the wet and cold of July and August, as the plants were well hardened and established earlier. The main batch of Celery is ready for the second earthing. First clear the ground of weeds and feed the roots with a fertiliser. The soil should be arranged to within six inches of the top of the plants. The final earthing up should be done in another fortnight after the leaves have grown again. Stimulate the last batch of Celery which was planted late in July with a suitable fertiliser, and, after each stem has been tied loosely with string or raffia, place fine soil half-way up the plant. The ground for the planting of spring Cabbages should be prepared at once. It should be heavily manured, especially when close planting is practised. Earliness is one of the chief considerations in the growing of spring Cabbages for market, but quality is more important, as the grower has to compete with market gar-

deners in the Evesham district and Ireland, whose Cabbages are unequalled for their hard, compact hearts. If the plants are strong a portion of the ground may be planted now, setting the Cabbages one foot apart each way. The main planting may be deferred till late in October. A further sowing of larger-headed varieties, such as Flower of Spring, Early Etampes, and Myatt's Offenham, should be made to obtain plants for spring planting.

NURSERY BEDS.—Plant Cauliflowers intended to be grown in frames in the spring about the middle of the present month, using plenty of black soil. Keep the soil moist, but place the lights in position during wet weather. The best varieties are Snowball and Early Erfurt. A second sowing may be made about October 6 or 8 to obtain seedlings for planting out-of-doors in the early spring. Large varieties, such as All-the-Year-Round, Leceri and Driancourt, are preferable. Prepare at an early date the winter quarter of the Lettuces intended for forcing and setting under glass in the spring. We only sow early in October such varieties as Little Gott, Passion, Milly and Paris Grey (Cos). The varieties Passion and Paris White intended for outdoor cropping are sown in the middle of November.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

PARSLEY.—Parsley plants intended to furnish a supply of leaves in the coming winter should be attended to before the season is far advanced. Cut the foliage hard back, whether it is required for present use or not, as by this means stocky, green leaves will develop, and these new leaves will withstand the cold of winter much better than those already present. Hoe the soil and dress it with soot. Where Parsley seed was sown in July, the seedlings are ready for thinning, and a number of them should be planted in a cold pit, which can be suitably protected in times of severe frosts and snow. Lift the plants carefully and transplant them in rich soil. They will soon develop fresh roots, and the crop may prove of great value throughout the winter. Leave the pit uncovered by the lights for as late in the winter as possible.

FRENCH BEANS.—Ventilate freely plants in cold pits both by day and night while the weather is favourable. Water the roots with weak liquid manure, and syringe the foliage with clear soft water. Guard against damage by slugs, and if their presence is suspected in the pits dust the soil with soot and lime. Continue to plant Beans in 7in. pots, and germinate the seeds in a temperature of 60°. When the plants are a few inches high top-dress them with a mixture of fine loam and decayed manure, making the fresh soil moderately firm. Never allow the plants to suffer from want of water. The Belfast is a good variety for this sowing.

BEANS GROWING ON SHELTERED BORDERS.—Provision should be made for the protection of this crop from early frost. A few wires extended along the border two feet apart and the same distance above the plants will suffice to carry a covering of light material, which, however, must never come in contact with the foliage.

CABBAGE.—Make a plantation of Cabbage at once to furnish heads for use in April next. The soil, which should not be of a rich nature, should be broken up, and the plants set in rows made 18 inches apart, allowing a distance of 14 inches from plant to plant in the lines. Water the roots freely at planting time, and, as soon as growth commences, stir the soil from time to time with the hoe. Another plantation should be made a fortnight later. Dust the plants and ground freely with lime in the early morning to destroy slugs.

SWEET MARJORAM.—Plants which have been growing in the open garden should be lifted and placed in 6-inch pots, and grown in a close cold frame until they are well rooted. When the plants are established in the ground ventilate them freely to prevent damping. This herb requires plenty of ventilation throughout the winter, and if the temperature is maintained at 45° the plants will grow freely.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would oblige by delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, SEPTEMBER 13—

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

TUESDAY, SEPTEMBER 14—

Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Dahlias," by Mr. J. Riding.) (National Dahlia Soc. Combined Show.)

THURSDAY, SEPTEMBER 16—

Nat. Rose Soc. Autumn Show at R.H.S. Hall, Westminster. Manchester and N. of Eng. Orchid Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 57.5.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: Thursday, September 9 (10 a.m.). Bar. 30.2. Temp. 67°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—

Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 10.30.

MONDAY AND WEDNESDAY—

Bulbs, Bay Trees, etc., at Stevens' Rooms, King Street, Covent Garden.

TUESDAY—

Annual Sale of Winter-Blooming Heaths, etc., by order of Messrs. B. Maller and Sons, at Burnt Ash Road Nurseries, Lee, S.E., by Protheroe and Morris, at 11.

WEDNESDAY—

Trade Sale of Bulbs, Palms, etc., by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 1.

Unreserved Sale of Greenhouses, Pining, Horse, Vans, Geraniums and Ferns, at Hyde Side Nursery, Lower Edmonton, by Protheroe and Morris, at 12.

FRIDAY—

Clearance Sale of Store and Greenhouse Plants at Wood Hall, College Road, Dulwich, by Protheroe and Morris, at 12.

Organic versus Inorganic Manures.

The history of science offers no more instructive or interesting chapter than that which records the growth of knowledge in the principles of manuring land. While from time immemorial the gardener has been content to use on his land as much good farmyard or stable manure as he could obtain, there have been periods when the agricultural chemist has urged that this faith in dung was excessive, and has maintained that a judicious outlay on artificials would result in crops at least as large as those obtained by the use of manure, as well as in a saving of money.

Nevertheless, the gardener went on using the product of stable or barn, and ignored the teaching of the chemists.

Now we learn from Mr. Hodson, who lectured at the R.H.S. meeting on the 31st ult. on the respective values of organic and inorganic manures, that there is much justification for the gardeners' prejudice in favour of organic manures.

By organic manure in contradistinction to inorganic Mr. Hodson means not only farmyard and stable manures, but any other waste products of animal or plant life—dried blood, fish manure, guano, rape dust, shoddy, and the like.

He points out that the actual market price (per unit of ammonia) of dried blood is 15 or 16 shillings, whereas that of sulphate of ammonia (an inorganic manure) is per similar unit 12-13 shillings; and he asks the pertinent question, why is the cultivator content to pay more for the one than the other if the amount of nitrogen is the same in both? Not so long ago the chemist would have maintained that sulphate of ammonia was to be preferred; urging in justification of that view that the high degree of solubility of the inorganic nitrogenous manure was a great point in its favour. Nevertheless it would be unjust to the chemists to claim that their conversion to a belief in organic manures is due to the gardeners' practice. They have worked out—or are working out—their own salvation, and the results of experiments carried on for years at Rothamsted have been important elements in provoking their change of opinion. Thus in one series of experiments with Mangels it was found that whereas a complete manure of superphosphate and potash with nitrate of soda gave 18 tons per acre and roots to the number of 14,130, a similar dressing of superphosphate and potash, but with rape dust in lieu of nitrate of soda, gave upwards of 21 tons per acre and roots to the number of 17,474.

A similar advantage in favour of organic manure is shown in the results of another series of Rothamsted experiments in which phosphates were given in different forms, namely, as superphosphate, basic slag, and bone meal. In all cases—with Swedes, Barley, and Wheat—the best result was obtained with bone meal.

The conclusion seems clear. Since the difference between organic and inorganic manure lies in the fact that the former contains humus and that the latter does not, the superior results due to the organic manures must be attributed to the beneficent action of the humus.

Now that action is of several kinds—mechanical, chemical, and biological.

The effects of humus on the mechanical conditions of the soil are well known. Clay is flocculated by it, and, in consequence, becomes more open; sand, on the other hand, becomes more retentive of water.

The chemical value of humus is understood only in a general way. It is composed of a large number of compounds of nitrogen and other "plant foods," and these compounds presently become available to the plant. The biological effect of humus is no less, and perhaps more, important; for that substance serves as a store of food for bacteria, and the latter in the processes of living break down the humus into compounds which are capable of being absorbed by the roots of plants.

It is furthermore suggested by certain American investigators that a disadvantage inherent in the use of inorganic manures is that they render the soil uncongenial to beneficent soil bacteria, and

hence arrest in a measure the processes of decay which must take place in every fertile soil.

Nevertheless, it must not be thought that Mr. Hodson would advocate the exclusion of inorganic manures from our gardens, but rather that they should be employed in conjunction with organic manures, and particularly those containing potash and phosphates. For, as is well known, although the use of such manures alone on poor land is productive of little good, their use in conjunction with dung leads to admirable results.

Yet another advantage of organic manures is shown by the Rothamsted records, in which the effects of dung are shown to persist for many years, whereas the residual value of inorganic manures is soon lost.

The main conclusion is clear: organic manures in one form or another are essential. If sufficient dung cannot be obtained recourse must be had to other forms of organic manure, of which many are on the market. If sufficient supplies fail the gardener, he must, and should, resort to the practice of green manuring. More might be done in this respect, and we should like to see an autumn crop of Mustard or Tares sown in the vacant land of every garden. Worked in rotation, now on this quarter and now on that, and dug in in the autumn, it would help to a very considerable degree to keep garden land in good heart.

WAR HORTICULTURAL RELIEF FUND.—A

committee of Belgian horticultural and agricultural experts has just been formed in London by the Belgian Minister of Agriculture to advise the various British relief funds in so far as they apply to Belgium. It is felt that the existence of such a committee will make it easier to bring Belgian horticulturists, both in this country and in their own, into touch with those who will assist them to restore their establishments after the war. The president of the committee is Monsieur LEBEVRE, Member of the Belgian Parliament, the secretary the Baron de ROSÉE, and the treasurer Monsieur HECTOR VAN ORSHOVEN.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. JOSEPH ROCHFORD, a member of the

committee of the Gardeners' Royal Benevolent Institution, has made a gift of £600 4½ per cent. War Loan stock to the funds of the institution. The gift is unconditional, except that the interest therefrom is to be considered as Mr. Rochford's annual donation to the institution during his lifetime. The secretary has also received a sum of £20 from the committee of the "Queen Alexandra Day" fund.

FUNERAL OF THE LATE F. W. HARVEY.—The

funeral of the late Editor of *The Garden* (whose sudden and early death we announced in our obituary column last week) took place on Saturday, the 4th inst., at Romford. The burial service was read by the Rev. RICHARD COLBORNE, curate in charge of St. John's, the church attended by Mr. HARVEY and his family, assisted by the Rev. J. JACON, rector of Whitwell, Salop. A large number of relatives and friends were present, including the Assistant Editor and Advertisement Manager of *The Garden*, and representatives from *The Gardeners' Magazine*, *The Gardeners' Chronicle*, the National Sweet Pea Society, the National Rose Society, Kew Gardens, the Kew Guild, and other organisations in which Mr. Harvey had taken an interest.



FIG. 55.—GATTON PARK: VIEW IN THE PLEASURE GROUNDS.
(See p. 161.)

SHREWSBURY PARKS INSPECTED.—On Thursday, August 13, the aldermen and councillors of the city of Shrewsbury made a round of inspection of the various parks and open spaces which add so much to the attractiveness of this old-world city. They were accompanied by the parks superintendent, Mr. A. J. WARD, who pointed out the work done during the year and the various improvements made.

TRIAL OF ANNUAL SUNFLOWERS AT WISLEY.—The trial of annual Sunflowers at Wisley will be continued in 1916, and senders of seed to the present trial are invited to send in their stocks again (twenty seeds of each variety) by February 20, 1916, addressed to the Director, R.H.S. Gardens, Wisley, Ripley, Surrey. A separate form of entry (to be obtained from the director) must accompany each variety sent.

CHRYSANTHEMUM DAY IN BELFAST.—The committee of the Ulster Horticultural Society held a special meeting on August 25, presided over by the Mayor of Belfast, to consider what steps could be taken by the society to render financial aid to the various philanthropic funds connected with the war. It was decided to hold a "Chrysanthemum Day," and a committee was formed for the purpose of making the necessary arrangements.

AGRICULTURAL RETURNS.—The Preliminary Statement of the Agricultural Returns for England and Wales, collected by the Board of Agriculture in June of this year, shows a decrease in the total area under crops and grass of 61,000 acres, of which 33,000 acres represents arable land and 28,000 acres permanent grass. Wheat shows an increase of 363,000 acres, or 20 per cent., as compared with last year, the 2,170,000 acres under this cereal being the largest recorded since 1891; while the increase since 1913 amounts to 469,000 acres, or nearly 28 per cent. Oats have also increased by 158,000 acres. These increases of the two most important corn crops have been obtained mainly by substituting them for Barley, Beans, Peas and roots. Barley shows a decrease of 273,000 acres, bringing the total under this crop to the lowest on record. Turnips and Swedes have fallen off by 113,000 to 932,000 acres, this being the first occasion on which the total has fallen below a million acres. Hay (whether "seeds" or meadow) has decreased by 147,000 acres. The decrease in hay may largely be attributed to the dry spring, as the area of permanent grass reserved for grazing has increased by 102,000 acres, while Clovers and seeds for grazing are about the same as in 1914. The other most important crop for human consumption (Potatoes) shows an increase of about 1,800 acres. All other crops, except Cabbage and Kohl Rabi, show decreases of greater or smaller extent.

CULTIVATION OF BUILDING SITES.—The Lord Mayor of Sheffield has been approached as to the possibility of using the waste lands and building sites in the city as allotments for the cultivation of vegetables during the war. This plan has already been adopted in London and other large towns with very useful results.

PACKING PLANTS FOR EXPORT.—Readers will recollect a complaint made last January through the medium of our pages by Dr. C. GORDON HEWITT, Dominion Entomologist of Canada, with regard to the careless way in which he had found British nursery stock to be packed for export to Canada. (See p. 26, January 16, 1915). He stated that English shipments arrived in Canada in very poor condition owing to ignorant and careless packing, although stock from other European countries, being well packed in suitable material, usually arrived perfectly fresh. In consequence of this charge made against British nursery firms the Horticultural Trades Association instituted an enquiry into the matter, and obtained information from consignees in Canada as to the condition in which their stock from this

country arrived. As a result of this investigation it is demonstrated that the charge of bad packing can only be sustained against the smaller firms, the larger nurseries being aware of the importance of proper packing.

THE MAKING OF FRUIT PULP.—The Board of Agriculture has issued a special leaflet (No. 31), giving directions for the making and subsequent use of fruit pulp of various kinds. It is with the object of pointing out a remunerative use for fruit for which there is no immediate demand that the leaflet under notice has been issued. The directions given are clear and concise, and the method of pulping recommended involves no more machinery than an ordinary steam boiler. Fruit pulp is chiefly used for jam-making, and though it is better to make jam if possible of fresh fruit, very good preserve can be made of fresh fruit and pulp combined. By means of pulping large quantities of fruit can be preserved, in plentiful seasons prices can be maintained, and by storing the pulp in seasons when fruit is cheap the cost of jam-making is reduced when fruit is scarce.

DEAR VEGETABLES.—The *Daily Chronicle* points out in its issue of August 23 that the substitution of vegetables for meat as articles of food would have been a counsel of perfection in the sixteenth century, the price of vegetables being then in many cases prohibitive. There were no kitchen gardens in England at that time. Only in 1509 were Carrots and Turnips first imported from Flanders, while the Cauliflower was unknown until 1588, when it was introduced from Egypt. Turnips, however, were well known by the end of the sixteenth century, and those grown at Hackney became celebrated. The Potato was also introduced at about the same time, but cost a shilling a pound!

AGRICULTURAL ACTIVITY IN BERLIN.—The citizens of Berlin, represented by the City War Association for Agriculture, have been making elaborate and careful arrangements since the beginning of the year for the cultivation of all available land within the confines of Berlin. In January last the association held its first meeting, and a few weeks later, by diligent co-operation with the municipality and other land-holding corporations, about 700 acres had been secured. About 200 acres were divided up into allotments, to be cultivated by poor families under the control of the association; the rest, about 500 acres, distributed over various suburbs, was retained to be cultivated under the immediate direction of the association itself. The land was carefully examined and apporportioned by agricultural experts. The major portion was devoted to the cultivation of Potatoes; but a plot of 140 acres, the bed of a lake known as the Tetlow Lake, which had been drained some time previously, was rich enough to be suitable for the cultivation of choicer vegetables. The lake-bottom was covered with brushwood, Nettles and Rushes, but this was quickly cleared away by a band of 500 prisoners of war—British and Russian—who were supplied by permission of the military authorities and worked under the direction of a guard of Landwehr. As soon as the ground was cleared arrangements were made for the training of 250 women and girls—all intelligent and well educated, belonging to the best Berlin society—to cultivate the vegetables to be produced. They were received in batches at the Dahlem Botanical Gardens, and were there given a short but effective course of training in rudimentary horticulture, afterwards proceeding to the ground, where they work in parties of twelve. Each dozen students is under the direction of a fully qualified woman gardener. Punctually at seven in the morning they begin their work, continuing until eleven, and at three in the afternoon they recommence, to cease for the day at seven p.m. All of them are giving their services free and work with great energy. The best and finest vegetables

from the lake-bed plot are taken in the vans of the association to the military hospitals, while the coarser kinds and the Potatoes from the other plots are taken to a distributing centre in the city, where they are given—or in certain cases sold—to the poor.

DESTRUCTION OF WASPS.—A correspondent in the *Journal of the Royal Society of Arts* writes that he has recently discovered the fact that the vapour of benzol and petrol is quickly fatal to wasps and many other insects. When touched with a brush dipped in either spirit they instantly collapse and die. He further states that he has destroyed several wasps' nests by the injection of about 2 ounces of benzol into each colony by means of a small syringe. The first injection is sprayed over the mouth of the nest, killing the sentry wasps and preventing the escape of any of the insects. The rest of the benzol is sprayed into the hole. One partly destroyed nest was opened and several hundred wasps in a collapsed condition were found, covering an area as large as a cheese plate. The first discharge of the syringe over these killed them all, not one escaping. The gas is not in any way ignited, but acts by asphyxiation. The method is thus seen to be perfectly simple and easy of manipulation, and should be more widely known.

"L'HORTICULTURE FRANÇAISE."—The issue of this French journal for April to June is the third since the war began. Thirty-four names of French horticulturists appear in the list headed "Died on the Field of Honour," and of those best known to our readers we have already made a brief mention. There is also a list of the old pupils of the Versailles School of Horticulture who have lost their lives in the war, and the names of French gardeners and nurserymen who have been wounded, taken prisoners, or who are reported as missing. The literary matter consists of numerous articles of varied interest to horticulturists. There is a report of the meeting of the Executive Committee of the Fédération Nationale des Syndicats Horticoles de France; a warning to French nurserymen on the purchase of Lily-of-the-Valley from German sources; a notice to those nurserymen who have suffered by the Teutonic invasion; and much advice on the relations of French horticulture with the enemy. Under the heading of "Horticulture Abroad" reference is made to the English Horticultural Relief Fund started by the R.H.S., and appreciative remarks concerning the *Gardeners' Chronicle* and its weekly page, "Pour Nos Amis Français et Belges."

PUBLICATIONS RECEIVED.—*Annual Administration Report of the Forest Department of the Madras Presidency*, for year ending June, 1914. (Madras: Government Press.) Price 2s. 9d.—*Bulletins No. 245 (Destruction of Flies)*, 261 (*Plum Borer*), 262 (*Parandra Borer*), and 263 (*Cranberry Rootworm*). (U.S.A. Department of Agriculture.) By L. O. Howard, Chief Entomologist.—*Temperance, Taxation, and Housing Reform*. Second edition. (Northern Daily Telegraph, Blackburn.) Price 2d.—*Bulletin of the Department of Agriculture, Jamaica*. Edited by H. H. Cousins, M.A. Price 2s.—*Queensland Agricultural Journal*, July, 1915. Edited by A. J. Boyd. (Brisbane: A. J. Cumming.) Issued by the Hon. the Secretary for Agriculture.—*British Rainfall, 1914*. By R. H. Mill and C. Salter. (London: E. Stanford, Long Acre, W.C.) Price 10s.—*Bulletin No. 282* of the U.S.A. Department of Agriculture. *Soft Resins in Stored Hops*. By G. A. Russell. (Issued by W. A. Taylor, Chief of the Bureau of Plant Industry.)—*Journal of the Board of Agriculture, British Guiana*. July, 1915, Vol. VIII., No. 3. (Demarara, Argosy Co., Ltd.) Price 1d.—*Transactions of the Royal Scottish Arboricultural Society*. Vol. XXIX., Part 2. July, 1915. (Edinburgh: Douglas & Foulis, Castle Street.)—*Potter's Cyclopaedia of Botanical Drugs and Preparations*. (Second edition.) By R. C. Wren, with additions by E. M. Holmes. (London: Potter & Clark, Artillery Lane, E.)

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLIV).

LE COMMERCE HORTICOLE BELGE AVEC L'ANGLETERRE ET LES PAYS NEUTRES.

DANS une note récente nous avons dit que l'horticulture belge souffre, plus que celle des autres pays, de la crise que cause la guerre, parce que sa prospérité était basée sur l'exportation, à peu près impossible actuellement.

Des efforts ont été faits en vue de remédier à cette crise en assurant l'envoi à l'étranger d'au moins une partie des produits. L'interruption dans les communications se complique des garanties que le gouvernement anglais, qui contrôle les expéditions par mer, exige pour éviter que sous le couvert de marchandises belges on n'expédie des produits d'origine allemande.

En principe l'envoi du produit de la vente était rigoureusement interdit, ce qui était évidemment de nature à causer de grands obstacles à l'expédition, mais une concession a récemment été accordée : sur avis favorable de la Chambre de Commerce belge à Londres, une somme d'argent représentant la valeur de la main-d'œuvre pourra être envoyée en Belgique. Cette concession a de l'importance, puisque pour la plupart des produits horticoles, la valeur provient à peu près exclusivement de la main-d'œuvre.

Pour le reste, les formalités requises par le gouvernement anglais varient selon que les produits sont destinés à l'Angleterre ou à un pays neutre. Dans l'un et l'autre cas l'expédition doit se faire par la Hollande.

Pour l'Angleterre, les exportateurs de plantes ont à obtenir du consul britannique à Flessingue ou à Rotterdam, un certificat d'origine. Ce fonctionnaire devant avoir ses apaisements au sujet de la provenance des produits, on recommande de produire des déclarations délivrées par le bourgmestre de la localité belge. Toutefois ce certificat n'est pas exigé pour les fruits et légumes, qui sont considérés comme denrées alimentaires dont l'importation en Angleterre est autorisée, quelle que soit leur origine, puisqu'il y a plutôt avantage à les enlever à l'ennemi.

Le gouvernement anglais exige aussi qu'aucun envoi de fonds ne soit fait sans son consentement et à cette fin, la livraison de la marchandise n'est faite par les autorités douanières que sur production d'un certificat d'une banque établissant que la valeur due y a été déposée, ou sur déclaration de l'importateur qu'il ne fera pas l'envoi des fonds provenant de la vente. Toute contravention expose à de fortes peines du chef de "Trading with the enemy."

Le destinataire aura de plus demandé au Board of Trade une autorisation d'importer. Les permis, qui ne s'accordent qu'à des sujets anglais, sont valables pour toute la campagne. *L'exportateur belge ne doit pas faire de demande.*

En ce qui concerne les envois vers les pays neutres et spécialement vers les Etats-Unis d'Amérique, les formalités sont plus compliquées, parce qu'en cas de fourniture, le gouvernement anglais n'a plus de contrôle sur l'envoi du produit de la vente. Il exige une demande de permis pour chaque envoi et le dépôt préalable, dans une banque anglaise, de la valeur de l'envoi. Celle-ci peut plus tard être retirée dans les mêmes conditions que pour les envois vers l'Angleterre.

Il est évident que dans ces conditions, l'exportation vers l'Amérique est très difficile. Ce n'est par actuellement que les producteurs belges peuvent consentir du crédit; l'exportateur a en réalité à payer deux fois la valeur des produits avant d'être autorisé à faire l'envoi, car les consignataires ne paieront pas d'avance des pro-

duits horticoles, dont la qualité dépend de l'état dans lequel ils arrivent. La nécessité d'un permis pour chaque envoi constitue aussi une grosse difficulté, les produits, surtout les fruits et légumes, devant se décomposer si ce permis arrive avec du retard. Les envois vers l'Amérique ne peuvent en effet se faire qu'en coïncidence avec les départs de la Holland-Amerika lijn, de Rotterdam. S'ils manquent le bateau, on en est réduit à écouler immédiatement en Hollande où on ne recouvrera pas les frais de l'emballage spécial nécessaire au transport par mer, ou à déposer la marchandise en frigorifère jusqu'au départ suivant, ce qui entraîne des frais et un pour cent sérieux d'avarie.

Ce sont ces considérations que les producteurs belges font valoir pour obtenir plus de facilités pour leur commerce. Ils expriment le ferme espoir qu'une solution compatible avec les exigences militaires pourra être trouvée.

NOUVELLES DIVERSES.

AU CHAMP D'HONNEUR.—M. Girault, pépiniériste à Orléans a payé un lourd tribut à la patrie. Trois de ses fils sont morts au front. Deux autres font encore vaillamment leur devoir. M. Marcel Delavrier, fils de M. Victor Delavrier, le commissionnaire en fleurs naturelles, a été tué à Souchez. Tombé aussi le lieutenant Alexandre de Lestrade, fils du président de la Société d'Horticulture du Périgord. Les anciens élèves de l'Ecole Nationale d'Horticulture de Versailles, mobilisés au nombre d'environ 500, ont perdu 46 des leurs au champ de bataille.

NOUVELLES DES MOBILISÉS.—M. Adnet, d'Antibes, a été blessé au bras droit et a perdu l'usage de ce membre. Il a néanmoins repris son service de capitaine instructeur. Le fils aîné de M. F. Blot, aspirant, a été blessé à Souchez; ses nouvelles sont bonnes. M. Pirlot, collaborateur au *Jardin*, infirmier fait prisonnier à Mauberge, est rentré en France. Le caporal Louis Fauconnier, jardinier chez MM. Vilmorin-Andrieux, a eu la jambe brisée et a reçu la médaille militaire. M. Henri Chatenay est instructeur au parc des automobiles de Boulogne, M. Lucien Charles Baltet lieutenant dans la cavalerie territoriale. On a de bonnes nouvelles de M. Alfred Nombrot et du caporal Rouhaud, des sous-lieutenants Eeckhout et Loffron. M. Faucheron, secrétaire général de la Société pratique d'Horticulture du Rhône est médecin auxiliaire au 54^e territorial. M. Lucien Chauré est toujours au poste. M. Henri Martinet reste sans nouvelles de son fils.

AUX HALLES CENTRALES DE PARIS.—Les mandataires aux Halles ont fondé, au château historique de Villebon, une Maison de Convalescence où soixante soldats provenant des hôpitaux militaires du camp retranché sont déjà installés. Un comité de mandataires assure les fonds nécessaires au fonctionnement de l'œuvre.

SECOURS AUX HORTICULTEURS DES PAYS ALLIÉS.—Le montant des souscriptions recueillies par la Société Royale d'Horticulture d'Angleterre en vue d'aider à la restauration des établissements horticoles détruits en Belgique et en France, s'élève déjà à 5,234 livres. La société tient des bulletins d'inscription à la disposition de ceux qui veulent y ajouter leur obole. L'exposition horticole de Haywards Heath, dont les bénéfices doivent être versés au Fonds, a produit cent livres.

À BERLIN.—Suivant des nouvelles de Genève, les Pommes de terre se vendent, à Berlin, 11 fr. 50 les 100 kilos. Les Choux y vaudraient 12 fr. 50 les 100 kilos, les Raves 17 francs.

LES LÉGUMES EN FRANCE.—A la suite des conditions climatiques, du manque de main-d'œuvre et des maladies, la récolte des Pommes de terre et des légumes est inférieure à la normale. La situation, sans être inquiétante, exige cependant que des mesures soient prises. A partir du 15 septembre, des restrictions seront mises à l'exportation. Exception est faite pour les Pommes de terre de semence, expédiées en caisses, à destination de l'Espagne et de l'Amérique et aussi pour les légumes destinés à la Grande Bretagne. Toutefois, l'exportation de Poireaux, d'Oignons, d'Aulx, de Choux, de Carottes, de Navets et de Pommes de terre (sauf exception stipulée plus haut) est interdite quelle que soit la destination.

IMPORTATIONS EN ANGLETERRE.—Durant les sept premiers mois de l'année, il a été importé 9,000,000 kilos de Pommes de terre de plus que l'année précédente. Les envois d'Oignons ont augmenté dans les proportions énormes, bien que pour juillet il y ait une légère diminution. Pour le même mois, les Tomates ont perdu 1,500,000 kilos. Les Pommes accusent une augmentation d'environ 3,000,000 kilos, les Oranges une légère diminution. Pour le mois de juillet, les importations de Prunes sont tombées de 8,500,000 à 3,000,000 kilos, celles de Poires de 4,500,000 à 600,000 kilos.

AU MARCHÉ DE TURNHOUT.—Le bourgmestre de Turnhout a fixé un prix maximum pour les Pommes de terre, soit 8 fr. pour les rondes, 9 fr. pour les longues. A la suite de cette mesure, les maraîchers ont manifesté au Marché aux légumes. La plupart n'avaient pas amené de Pommes de terre et ceux qui avaient leurs apports ordinaires n'ont pas été autorisés à les vendre parce qu'ils refusaient de la faire au prix maximum.

KORT OVERZICHT VOOR DE VLAMINGEN.

Uitvoer van Belgische planten mag naar Engeland geschieden in geval van den Engelschen consul in Holland een oorsprongcertificaat bekomen wordt. Het bedrag der levering mag slechts nitbetaald worden als de Engelsche regeering toelating geeft.

Voor het fruit en de groenten is het oorsprongcertificaat niet vereischt.

Wanneer men met Amerika wenscht te handelen, moet men voor elke zending eene toelating vragen. Bovendien moet de waarde der voortbrengselen op voorhand in een Engelsche bank gestort worden.

De duitse fruitkweekers hebben veel last met het plukken daar alle handen naar den oorlog getrokken zijn. Er is gevaar dat veel in den boomgaard zal verrotten.

In Frankrijk heeft men noodig geacht paal te stellen aan den uitvoer van groenten die tot nog toe ongehinderd plaats had. Te beginnen van 15 september is de uitvoer van zekere soorten verboden, van andere beperkt.

Van ongeveer 500 oud-leerlingen die binnengeroepen werden, heeft de Tuinbouwschool van Versailles er 46 op het veld van eer verloren.

Te Turnhout hebben de hoveniers geweigerd aardappelen te verkoopen, daar de van ambtswijze vastgestelde prijs (8 en 9 fr.) hun geene voldoening gaf.

HOME CORRESPONDENCE.

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

CONES ON ARAUCARIA IMBRICATA.—A tree growing on the lawn in these gardens has, at the present time, about one dozen large, brown cones, and there appear to be more forming at the top of the branches. Like Mr. Allan, I have never before seen a tree of this conifer coning, and, so far as I can ascertain, this one has never done so before. *W. Tee, Gardens, Twyford Lodge, nr. East Grinstead, Sussex.*

I have known many cases of this *Araucaria* bearing cones. Last year was exceptionally favourable for the production of cones, and the seeds ripened so well that the seedlings came up, even on the paths under the trees. At Busbridge Hall, near here, there are large trees bearing quantities of cones this season, especially on the south side of the trees. At Leonardslee, in Sussex, several trees cone fairly regularly, and I have seen the fruits in different places for some years other than those mentioned. I have also seen trees with cones as far north as Peterborough, and I have known the tree to bear cones in Wiltshire and Dorsetshire, Cornwall, and in the Channel Islands. It is evident, therefore, that coning is fairly common in this country. *W. A. Cook, "Wind-whistle," Godalming, Surrey.*

At Basing Park there is an avenue of *Araucarias* a mile in length, and the trees usually bear cones freely. Possibly the reason that your correspondent has not seen the cones before is that the trees are unisexual, and male and female trees must be grown in close proximity for the seeds to set. Male cones are thin and pendulous, the female ones grow upright and somewhat resemble a Pineapple in appearance. *Araucarias* are peculiar in that no two specimens I have ever seen have had the same habit of growth. Some are very compact, others loose, some very stiff and upright, whilst others are pendulous. Again, in some the branches are disposed widely apart and in whorls, whilst the growth is very dense in others. Generally the female trees are more compact and regular in growth than the male, and make handsomer specimens. This may account for the more numerous planting of the female trees. *F. A. Edwards, The Saints Gardens, Alresford.*

In these gardens we have several fine *Araucaria* trees, two of which are bearing cones. So far as I can gather the two trees in question were planted about sixty years ago, and this season one of them carries thirty-four cones and the other fifty-three cones. Other trees of the same age fail to fruit, but this can be explained by the fact that it is only the female trees that bear cones. Perhaps Mr. Allan has only come in contact with the male form of this tree until this year. *E. Matthews, Stratfield Saye, Hampshire.*

In reference to Mr. James B. Allan's enquiry as to the coning of *Araucaria imbricata* in Great Britain, some years ago at Drayton Manor, Tamworth, Warwickshire, I saw a fine avenue of the trees. Several specimens were bearing gigantic cones, and I noticed that those bearing the fruits were of a pendulous habit, while those with staminate catkins had an erect growth. Whether this dioecious characteristic is invariable or not appears to be questionable. It is said that occasionally both the male and the female flowers have been observed upon the same tree. *W. G.*

So far from the production of cones being unusual it is of regular occurrence on mature trees. We have here a hill-top planted with 1,250 *Araucarias* raised from seed ripened in this country (Wigtownshire) upon trees in the avenue at Castle Kennedy. The female cones remain two years on the branches, the scales opening about midsummer of the second season, when fertilisation takes place by pollen discharged from the male catkins, which are produced on separate trees. *Herbert Maxwell, Monreith.*

HELIOTROPIUM THE SPEAKER.—Those who have not used this fine *Heliotrope* should add

the variety to their list of bedding plants for next year. I have two large beds filled with the plants, with Harrison's Musk as a groundwork, and the effect has been much admired by all who have seen them. The soil is a light, rich loam, and the *Heliotropes* are growing and flowering profusely, bearing trusses measuring from 7 to 9 inches across, with delicious fragrance. This *Heliotrope* also does well in pots, but it is as a bedding plant that I specially commend it to those who have not tried it. *Henry Henderson, Castlecomer, Co. Kilkenny.*

CONFESSIONS OF A NOVICE.—Your correspondent who writes so ably and amusingly the "Confessions of a Novice" enquires for a good yellow Rose (Rambler Rose, I presume, to judge from the names given by him as being unsatisfactory). I consider our best Rose of this description to be *Alister Stella Gray*, and if your correspondent has not yet tried this variety he would, I think, find it to his mind. It is true that the colour fades as the flower expands—this is a defect of all yellow Roses—but for freedom of growth and flowering the variety is supreme. *Albéric Barbier* is another very good cream-coloured Rose, but not so free in flowering as the first-named. The foliage is, however, very handsome, and the plant is practically evergreen in these gardens. I hope this may be of use to one whose writings I enjoy. *Alfred T. Harrison, Eynsham Hall Gardens, Witney.*

LARGE PEACHES.—During the past few days I have gathered excellent fruits of *Peach Crimson Galande* grown in an orchard house. Several of the fruits weighed 8 ounces, one 8½ ounces, and one 10½ ounces. Is 10½ ounces an unusual weight for a fruit of this variety? *F. G. Wicks, Bushey House Gardens, near Watford, Hertfordshire, August 24.* [Our "Record" book has no entry for a fruit of this variety. The largest fruit recorded therein is of the variety *Thos. Hogg*, the weight being 23½ ounces. Other large fruits of which we have record are *Salway*, 17½ ounces; *Gladstone*, 15½ ounces; *Noblesse*, 15½ ounces; and *Late Admirable*, 8½ ounces.—EDS.]

THE TRANSFUSION OF SAP.—Permit me through the medium of your paper to invite the co-operation of fruit-tree growers and fruit-growers to carry out a comprehensive and widespread scheme for the improvement of British fruits and crops of fruit by the application of the principle of transfusion of sap. When raising new fruits by crossing two varieties a sufficient stock of seedling trees should be produced and "grown on," so that only a self-pollinating tree might be used to propagate a stock for cultivation. If a sufficient number of seedling trees (of any one cross) were tested it is certain that some would carry the character of producing fertile pollen and yet be in other respects the same as a sterile variety of this cross. The process I have indicated would entail but little trouble at the outset, and would be the means of preventing a vast amount of trouble and loss. These self-sterile varieties of fruit trees have to depend upon a "fair wind" for the carriage of pollen from another variety forming a suitable mate. The question now is whether we can even now correct the fault of sterility in these trees and make them capable of pollinating their own blossoms? I think we can. My suggestion is that the character of producing fertile pollen may be introduced into sterile varieties of fruit trees by transfusion of sap, by the simple expedient of a graft from another variety. In confirmation of my theory I will mention a case which has come under my notice. A large plantation of one variety of fruit trees failed to fruit, and it was found that when artificially pollinated with pollen of another variety branches of these trees fruited perfectly. It was therefore decided to try the experiment of introducing a graft of this variety on the top of each tree, for the purpose of ensuring the presence of fertile pollen on each plant. The operation was carried out last March, and the result proved successful, but not in the way expected. The trees fruited at once, and so heavily that the fruits had to be thinned. This was not, then, the result of the pollen from the grafts, because these did not flower. Was it, then, the transfusion of sap from these grafts?

I think that it was, and I submit that the matter is at least worth a trial. I would invite fruit-growers to make experiments such as I have indicated, and report the results to me. I am now budding *Pond's Seedling Plum* on *Green-gage* trees. I have received a letter from a fruit-grower, Mr. Albert J. Church, of Swardeston, Norfolk, in which he says: "About thirty-five years ago my father bought an odd lot of fruit trees, which he planted. One of these was unnamed, and was ten years without fruiting, when my eldest brother grafted the early *Irish Peach* on to a low branch. To our surprise the tree at once commenced to fruit. It is now a large healthy tree with a very heavy crop of Apples, and the branch of *Irish Peach* is completely overgrown by the branches of the original variety." *R. Holmes, Tuckwood Farm, Norwich.*

STOPPING VINES.—I have experimented this year with a few bunches of Grapes to see whether they would succeed equally well when the shoot on which they grew was stopped at the bunch. *Lady Downes*, *Muscat of Alexandria*, *Black Hamburg*, and *Black Alicante* were the varieties chosen. The *Black Hamburg* Grapes were selected and cut as being among the best of that variety; and I am sending a double bunch of *Black Alicante*. The various bunches are indeed neither better nor worse on the whole than those treated in the usual way, which proves that it is not essential for the shoot to extend beyond the bunch. Whether it would be wise to stop all Vines at the bunch is another question, but no one need be afraid to allow a promising bunch to remain on a shoot that has been so truncated. It was, I think, the late Dr. Hogg who promulgated the theory of the importance of ripening black Grapes under a thick shade of foliage, and white varieties in the maximum of light. I have frequently been obliged to shade *Muscats*—last summer, for instance—and never found that the berries failed to assume the yellow hue proper to the variety. This year I have convinced myself that black Grapes need no special shading in order to colour. As no secondary shoots are allowed to form, there are on none of the Vines any leaves save the primary ones, and I have made sure, in addition to the amount of light that reaches bunches under these conditions, that a number of bunches received even more light than the partial shade of these leaves permitted. The bunch sent is one such, but the blackest of all are examples of *Lady Downes*: *Black Muscat* colours quite successfully, too. After many years' observation I am convinced that it is a mistake to allow any foliage beyond the primary leaves on Vines. Leaves formed on the sub-laterals are of no value, and I should be inclined to regard them as harmful, inasmuch as they absorb material from the Vines without giving anything in return. The labour attached to growing Vines in the former way is considerably less. An hour or two each morning suffices to rub off very young shoots, for which, under usual conditions, a whole day would no more than suffice. The flavour to be desired in Grapes is more or less a matter of personal taste. *Muscat of Alexandria* is, without question, the variety that appeals to most palates, but there are some who dislike it. Some people prefer *Sweet Water* above all other varieties, and consider *Black Alicante* the best for winter eating. This Grape is usually condemned for its poor flavour, but given time, the minimum of artificial heat, and the maximum of ventilation, the berries finish well. The fact that it is one of the few varieties that have survived the criticism of centuries demonstrates its usefulness. *B.*

FLOWERS OF MILTON.—I think it not improbable that Milton's reference to "the rather Primrose that forsaken dies," is accounted for by the seed vessels drooping to the ground, and so being hidden under the leaves and grass, giving the impression that it bore no seeds. Shakespeare seems to express the same idea in the speech of *Perdita*: "Pale Primroses that die unmarried . . . a malady most incident to maids"; and probably Spenser also held the same opinion: "Virgin Lillies and the Primrose trew." *B.*

SOCIETIES.

ROYAL HORTICULTURAL.

(Concluded from p. 159.)

In the last issue the descriptions were given of the novelties that gained awards at the meeting held on the 31st ult. We now print particulars of the general exhibits in the floral and fruit and vegetable sections for which medals were awarded.

Floral Committee.

GROUPS.

The following Medals were awarded for collections:—

Gold Medal to the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Edwin Beckett), for a collection of trees and shrubs of recent introduction from China. This was much the largest exhibit; it extended the entire length of the hall, and had a depth of about 12 feet. Many of the plants were shown under the collector's numbers, and comprised new species of a wide range, including Conifers, Coton-easters, Berberis, Populus, Vitis, Liquidambar, Pterocarpus, Pyrus, Lonicera, Aesculus and Betula. A few of the more promising from a garden point of view were Populus No. 4,361, with rose-tinted leaves that are white underneath and have red veins, the stems also being coloured red; No. 4,299, a dwarf shrubby Birch; Melosma Beaniana, a very ornamental foliage plant, the petioles and nerves being coloured red; Aesculus Wilsonii, a distinct Horse Chestnut; Hydrangea Sargentiana; Lonicera nitida, a shrubby evergreen Honeysuckle; Pyrus No. 4,215, with brownish-red foliage and large buds; Liquidambar formosana motticolar, glorious for autumn tinting; Pterocarpus palmis; and Rubus flagelliformis.

Silver-gilt Flora Medal to S. MORRIS, Esq., Earltam Hall, Norwich (gr. Mr. G. Henley), for a collection of Montbretias. Novelties included Queen Elizabeth, orange-red; Queen Anne, with big, bold flowers of pale orange colour, Queen Boadicea, deeper in tone than the last, Pageant and Westwick.

Silver Flora Medal to Messrs. J. CHEAL AND SONS, Crawley, for Dahlias and hardy border flowers. The Dahlias comprised varieties of all types; the Singles, which this firm show consistently well, were especially good, notably the varieties Leopold, Snowdrop, Beacon, Diana and Kitty. The pink decorative variety Delice was shown well, and other fine varieties of this type were shown in Loveliness, pink tipped with white, and Geisha, orange-scarlet.

Silver Banksian Medals to Messrs. H. B. MAY AND SONS, Edmonton, for Bouvardias and Ferns, and Messrs. PEED AND SON, West Norwood, for a table of Streptocarpus of a good strain.

Fruit and Vegetable Committee.

GENERAL EXHIBITS.

A Silver-gilt Knightian Medal was awarded to C. A. CAIN, Esq., The Node, Welwyn (gr. Mr. T. Pateman), for a collection of fruit. This admirable exhibit included well-coloured, shapely bunches of Madresfield Court, Muscat of Alexandria, Appley Towers, and Muscat Hamburg Grapes; Peaches Royal George and Violet Hative; Nectarines Humboldt, Lord Napier and Elruge; Pears Triomphe de Vienne, Durondeau and Williams' Bon Chrétien; Transparent Gage, Green Gage, Jefferson and Kirk's Plums; also choice Apples, Figs and Currants.

One of the most interesting exhibits was a collection of 26 seedling Plums, shown by Messrs. LAXTON BROS., Bedford. The principal object of the crosses was to combine the prolific cropping of Victoria with the quality of others; thus this parent was used with Greengage, The Czar, Kirk's Blue, Black Kentish Diamond, Black Diamond, Reine Claude de Bavay, Red Magnum, Wallace Prune and Early Orleans. Other crosses were The Czar with Pond's Seedling and Prune Damson; Early Orleans with Black Diamond and Reine Claude with Early Prolific; there were also seedlings from Monarch, Primate, Jefferson, and Sultan.

The more promising varieties were Victoria × Greengage, an oval, pale-yellow fruit with Greengage flavour, and as free in cropping as Victoria;

Greengage × Sultan, a purplish-black variety, with small stone and of agreeable flavour; and Late Rivers × Monarch, a very prolific fruiter. This firm also showed late fruiting Strawberries, including Laxton's Perpetual, Everbearing, and White Perpetual.

Mr. J. ALLGROVE, Langley, showed three pot trees of his new Plum, Allgrove's Superb, each fruiting very freely; also choice fruits of Apples St. Everard and Lady Sudeley, and Pears Dr. Jules Guyot, Clapp's Favourite, and James Grieve.

Messrs. S. SPOONER AND SONS, Hounslow, showed 43 varieties of Apples, also a few dishes of Pears, Blackberries, and Wineberries. Of the Apples, Golden Spire, Rev. W. Wilks, Good-enough's Nonesuch, a splendid early dessert variety with highly coloured skin; Lord Grosvenor and Early Victoria are a selection. (Silver Banksian Medal.)

Messrs. GEO. BUNYARD AND CO., LTD., Maidstone, showed well-grown fruits of Apple Maidstone Favourite, that received an Award of Merit on August 26, 1915.

Messrs. DANIEL BROS., Norwich, exhibited a large-fruited Black Currant named The Norwich Black. The Committee recommended the variety to be tried in the Wisley gardens.

Messrs. SUTTON AND SONS, Reading, had an interesting collection of French and Runner Beans. There were 20 distinct varieties, including small-podded, old-time sorts, and modern varieties, some of the largest pods measuring 16 inches. Best of All was very noteworthy, the long, straight pods of this variety being the finest of all. Others of special merit were Prize-winner, A.L. with broad, fleshy pods, and Sutton's Scarlet, a prolific cropper. Of the Runner French Beans, the best were Tender and True and Earliest of All; there was also a new type of this Bean with narrow pods, suitable for cooking whole. Pods arranged on a board showing the development in Scarlet Runners from the Common Scarlet, through Common White, Painted Lady, Champion Scarlet and Ne Plus Ultra to Best of All, were extremely interesting. (Silver Banksian Medal.)

TRIAL OF EARLY AND MID-SEASON POTATOS.

The following awards have been made to varieties of Potatos grown under trial at the society's gardens, Wisley:—

AWARDS OF MERIT.

First-Early Varieties—Duke of York (Messrs. DOBBIE AND CO.).

Second-Early Varieties—Old Yellow Ashleaf (STARK); Stirling Castle (SUTTON AND SONS).

Mid-Season Varieties—Arran Chief (R. VEITCH AND SON); Stretton No. 20 (MILNE); Wolfe's Secundus (DOBBIE AND CO.).

The Second-Early variety General Joffre (SANDS) was commended.

PREVIOUS AWARDS CONFIRMED:—*First-Early Varieties*—Midlothian Early, Award of Merit (1903) (Messrs. DOBBIE AND CO.).

Second-Early Varieties—Whitehill Seedling, First-class Certificate (1912) (DOBBIE AND CO.); Express, Sharpe's, Award of Merit (1901) (BARR AND SONS); Sir John Llewelyn, Award of Merit (1900) (DOBBIE AND CO.).

Mid-Season Varieties—Great Scot, Award of Merit (1911) (R. VEITCH AND SON).

VEGETABLE AND SWEET PEA SHOW AT CHESTER.

AUGUST 21.—The exhibition of vegetables and Sweet Peas organised by Messrs. Dicksons, Ltd., seed merchants and nurserymen, of Chester, was held on the 21st ult. at the Newgate-street Assembly Rooms. The number of entries was almost double that of last year. The exhibits were remarkable for their high level of quality, the collections of vegetables being particularly fine. Onions were exceptionally good, and Tomatos were also well represented. Carrots, Leeks, Celery, Cucumbers, Marrows, Peas, Beans and many other vegetables were represented. The room was decorated with Palms and other plants and hardy border flowers.

Sweet Peas were not so good as at previous shows, owing to the unfavourable weather. A collection of Roses was shown by Messrs. DICKSONS.

In the class for a collection of vegetables, 12 distinct varieties, the 1st prize was won by Mr. JAMES MILLS, Shavington-gardens; 2nd, Lady BRYDGES, Bonlittbrooke, Norton (gr. H. Mann); 3rd, Mr. JOHN EDWARDS, Overton-road, Ruabon.

For spring-grown Onions Mr. JAMES MILLS was again placed 1st; and the 2nd prize was awarded to the Right Hon. Lord TREVOR, Brynkinalt, Chirk (gr. T. Dent).

For Kidney Potatos the Misses HOWELL, Rhieport, Monmouthshire (gr. E. Jones) won the 1st prize, and were also successful in the class for round Potatos.

Mr. WM. CARTER, Abbots Meads, Chester, gained the 1st prize for White Celery and for Beetroots, whilst Mrs. J. S. L. KIRWAN excelled in the classes for Parsnips and Broad Beans.

For nine vases of Sweet Peas, in nine distinct varieties, 20 spikes of each, Mr. J. J. WILLIAMS won the 1st prize, followed by Mr. THOMAS SANDERS, The Old Hall, Christleton.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

AUGUST 18.—Committee present: Rev. J. Crombholme (in the chair), Messrs. J. C. Cowan, J. Cypher, J. Evans, A. R. Handley, Dr. Hartley, J. Lupton, D. McLeod, W. J. Morgan, W. Shackleton, S. Swift, Z. A. Ward and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Cypripedium niveum Heatherlea variety, shown by Miss BOLTON.

Cattleya Sybil variety Emmilene, shown by Mrs. R. LE DOUX.

Laelia Cattleya Aranda (C. fulvescens × L.-C. Luminosa), shown by Mr. S. GRATRIX.

AWARDS OF MERIT.

Miltoniodes Harwoodii Ashlands variety, *Oncidium Mantini* Ashworthae, and *Odontoglossum perculum* variety Brunette, all exhibited by R. ASHWORTH, Esq.

Cattleya Sybil variety Aline, shown by Mrs. LE DOUX.

FIRST-CLASS CULTURAL CERTIFICATE.

Mr. C. FINDLOW, gardener to A. J. Oakshott, Esq., for a plant of *Miltonia vexillaria* var. Enchantress having 118 blooms.

The following medals were awarded for groups:—

Large Silver Medal to R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden).

Silver Medals to Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton), Messrs. CYPHER AND SONS, Cheltenham, and Messrs. SANDER AND SONS, St. Albans.

Bronze Medal to A. J. OAKSHOTT, Esq., Bidston (gr. Mr. Findlow), for his plant of *Miltonia vexillaria* Enchantress.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

SEPTEMBER 1 and 2.—The annual show of this society was held on the 1st and 2nd inst. in the Zoo Buildings, Glasgow. The entries numbered more than 1,000, though rather fewer than usual. Fruits, and especially Grapes, were a feature of the show, whilst the quality of the vegetables staged has rarely been better at these shows. The profits of the show are to be handed to the Red Cross Fund, and many pot plants, cut flowers, vegetables, and fruit were contributed by exhibitors for the benefit of the fund. Lord Rowallan gave 30 baskets of magnificent bunches of Grapes. Most of the exhibits were sold at the close of the show, and it is expected that considerably more than £300 will be realised in this way. Trade exhibits contributed largely to the success of the show, which was opened by Lady Stirling-Maxwell, of Pollokshaws. Large numbers of visitors were present on both days.

POT PLANTS.—In the section devoted to pot plants the principal class was for a group of stove or greenhouse plants, to occupy a circular space 9 feet in diameter. T. C. BISHOP, Esq., Helensburgh (gr. Mr. John Hood), was awarded the 1st prize, and Mrs. STIRLING, Torsay Castle, Mull (gr. Mr. Alex. E. Davidson), the 2nd. The principal prizes for Orchids were won by Wm. MACKAY, Esq., Ascog, Rothesay (gr. Mr. David Halliday). Mrs. ROSE, Downhill, Glasgow (gr. Mr. James Templeton), excelled easily in the classes for Palms. In the classes for 12 plants and for 6 plants suitable for table decoration the 1st prizes were won by Mrs. STIRLING, Torsay Castle, Wm. FAIRD, Esq., Cambusdoon, Ayr (gr. Mr. Robert J. Clark), being placed 2nd in both classes. This gentleman excelled in the class for ornamental foliage plants, in which Mrs. ROSE was 2nd. The EARL OF HOWE, K.T., Bothwell Castle (gr. Mr. Wm. P. Bell), showed the best Codiaenms (Crotons). In all the classes for Ferns Mr. THOMAS NELSON, Muirbank, Rutherglen, was easily 1st.

CUT FLOWERS.—In this section competition was not so keen as in previous years. The outstanding exhibit was of 24 spikes of Gladioli, shown by Messrs. GEORGE MAIR AND SON, Prestwick, who were awarded the 1st prize; 2nd, Messrs. A. CAMPBELL AND SON, nurserymen, Gourrock. Roses were not a strong feature. For 24 blooms, distinct, there was good competition and the 1st prize was awarded to Messrs. HUGH DICKSON, LTD., Belfast; 2nd, Mr. Wm. FERGUSON, Dunfermline; 3rd, Messrs. T. SMITH AND SONS, nurserymen, Stranraer. In the class for 18 blooms Mr. GEORGE A. TURNBULL was placed 1st, and Mrs. RUSSELL, Newton Mearns, 2nd. Mr. JOHN SMELLIE, Busby, showed best in the classes for 24 blooms and for 12 vases of Cactus Dahlias; and Mr. JAMES PAUL was the most successful exhibitor of Pompon and Colerette varieties. Sweet Peas are always well shown at Glasgow, and comprise the most important section in the classes for cut flowers. On this occasion there was strong competition in nearly every class. For 18 vases Mr. JOHN SMELLIE led, followed by P. W. HAMILTON, Esq., Newton Mearns (gr. Mr. James Thomas). In the class for 12 vases Mr. JAMES PAUL, Killearn, was placed 1st, and Mr. JOSEPH HARBOTTLE, Greenock, 2nd. For 9 vases the 1st prize was won by Miss STEWART, Skelmorlie (gr. Mr. C. R. Hill). Pansies and Violas are always a strong section at these shows: the veteran grower of Campbeltown, Mr. ALEX. OLLAR, was the principal winner in the larger classes for these flowers.

FRUIT.—The principal class was for 12 dishes of fruit, to consist of 12 distinct varieties. The awards were: 1st, A. A. HAGART SPEIRS, Esq., Houston House, Houston (gr. Mr. Jas. Brown); 2nd, Wm. MACKAY, Esq., Rothesay (gr. Mr. D. Halliday); 3rd, J. A. CLYDE, Esq., K.C., M.P., Fossoway (gr. Mr. F. Macrae). For 6 dishes the awards were: 1st, E. BEWLEY, Esq., Rathgar, Co. Dublin (gr. Mr. D. McIntosh); 2nd, Lord ELPHINSTONE; 3rd, R. M. DONALDSON, Esq., Row (gr. Mr. Robt. Glen). The principal class for Grapes called for 8 bunches, and CHARLES W. FORBES, Esq., Callender House, Falkirk (gr. Mr. John Middleton) was placed 1st; whilst for 4 bunches, distinct, Wm. MACKAY, Esq., excelled. The best collection of Pears, in 6 varieties, four fruits of each sort, was shown by Miss HAMILTON, Rozelle, Ayr (gr. Mr. Andrew Harvey). Sir FRANCIS LLOYD, K.C.B., Aston, Oswestry (gr. Mr. Walter Staward) easily excelled in the class for Plums.

VEGETABLES.—The competition in this section of the show was very keen. STEPHEN MITCHELL, Esq., Boquhan, Kippen (gr. Mr. Chas. Shaw) was easily 1st in the two classes for collections of vegetables, and was followed by the EARL OF HOWE, Bothwell Castle (gr. Mr. W. P. Bell). The latter exhibitor excelled in the principal classes for Potatoes.

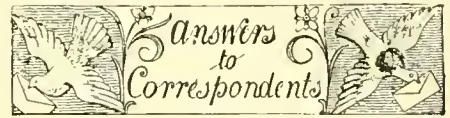
HONORARY EXHIBITS.

Gold Medals were awarded to Messrs. ALLWOOD BROS., Haywards Heath, for Perpetual-flowering Carnations; Messrs. AUSTIN AND McASLAM, Glasgow, for a group of flowering plants; Messrs. BLACKMORE AND LANGDON, Bath,

for Begonias; Messrs. J. COCKER AND SONS, Aberdeen, for hardy herbaceous plants and Roses; Messrs. MALCOLM CAMPBELL, LTD., Glasgow, for a collection of fruit; Messrs. DOBBIE AND CO., Edinburgh, for Roses, Sweet Peas, Dahlias and Pentstemons; Mr. Wm. LEIGHTON, Glasgow, for Perpetual-flowering Carnations; Mr. D. G. PURDIE, Glasgow, for Streptocarpus; and Messrs. SUTTON AND SONS, Reading, for a collection of vegetables.

Silver Medals to Messrs. HUGH DICKSON, LTD., Belfast, for Roses; Messrs. E. F. FAIRBAIRN AND SONS, Carlisle, for Phloxes; Messrs. JOHN FORBES, LTD., Hawick, for Phloxes; Messrs. HOGG AND ROBERTSON, Dublin, for Gladioli; Messrs. SANDER AND SONS, St. Albans, for Orchids; Messrs. WILLIAMSON GEMMELL AND CO., Glasgow, for fruit and flowers; and Mr. W. WELLS, JUN., Surrey, for Delphiniums.

There were several smaller exhibits to which *Bronze Medals* and *First-class Certificates* were awarded.



ABNORMAL MARROW: H. W. The abnormal Marrow of which you send an illustration has been produced by fusion of three fruits; twin Marrows are common, but triplets are more unusual.

APPLES ROTTING: A. J. G. We cannot identify the pest which is attacking your Apples without seeing a specimen. Send us one of the affected Apples, with some of the insects you mention.

CAMELLIA FRUITING: L. A. W. The fruiting of *Camellia japonica* is not so rare as you imagine. The sketch by Mr. Worthington Smith reproduced in fig. 56, was made from specimens which developed in this country



FIG. 56.—FRUITS OF *CAMELLIA JAPONICA*: HALF NATURAL SIZE.

Obituary.

WILLIAM BICKERTON.—The American journal, *Horticulture*, records the death of an English gardener, Mr. William Bickerton, who was born in Shropshire in 1838, and emigrated to America at the age of 21. He was at first engaged in private gardening, but afterwards engaged in business as a florist and landscape gardener at Salem, Mass.

R. J. GROVES.—We learn from the pages of the *American Florist* of the death of R. J. Groves, a native of Bromsgrove, who emigrated to America in 1857. He finally settled at Atchison, Kansas, where he established a florist's business.

NEW INVENTIONS.

THE CASCADE NOZZLE SPREADER.

We have received from the inventor, Mr. T. H. Webster, Stock, Essex, a simple attachment for the nozzle of a watering-can, known as the "Cascade" spreader. The spreader, which is very simple in construction, causes the water to issue from the can in a thin, wide sheet, the result being something the same as that produced by placing the fingers under the nozzle of an ordinary can, but better and more even. Gardeners would find the attachment especially useful for damping stages and bare surfaces in a glass-house, and also for watering seed pans, damping overhead, and applying weed-killer to garden paths.

and ripened fertile seeds. The fruits are of a ruddy hue, and consist of a three-celled capsule, which bursts through the dorsal sutures into three valves.

CATERPILLAR DESTROYING CERASUS LEAVES: A. C. H. The caterpillar you send is that of the Vaporer moth (*Orgyia antiqua*). Spray the bushes with arsenate of lead, and carefully collect the winter cocoons, with the ova, to prevent a repetition of the attack.

CELERY DISEASED: F. S. See reply to J. S. in the last issue, p. 160.

CRABS AND QUINCES: F. C. The Crabs and Quinces you mention are edible. (See *Gard. Chron.*, March 20, 1915, p. 148). Mortar rubble incorporated with the heavy clay of your garden would be especially valuable to the Cherries, and indeed to all stone fruits, besides serving to lighten the texture.

DISCHARGED GARDENER: *Bungalow*. No doubt the implied terms of your engagement were that you should have the use of the gardener's house for so long as you acted as gardener, but no longer. As soon, therefore, as your employment terminates you will no longer have the right to remain in the house. Probably, however, if you explain to your employer that, notwithstanding all your efforts, you have not been able to secure another house, he would endeavour to meet your convenience as far as possible, rather than go to the trouble and expense of taking ejectment proceedings against you. But you must bear in mind that the new gardener will probably need to have the use of the house, just as you have done in the past.

FLOWERING PLANTS FOR THE GREENHOUSE DURING JULY AND AUGUST: *B. G.* The following list includes plants suitable for your purpose:—Zonal and Ivy-leaved Pelargoniums, Fuchsias in variety, *Hydrangea hortensis* var., *H. paniculata grandiflora*, *Plumbago capensis*, *Isoloma hirsutum*, *Achimenes* in variety, *Statice brassicaefolia*, *S. imbricata*, *S. intermedia*, Carnations, *Cannas* in variety, *Francoa ramosa*, *Campanula pyramidalis*, *Lilium speciosum* in several varieties, *L. auratum*, *L. Henryi*, *L. sulphureum*, *Crinum Powellii* and its white variety, *Crinum Moorei*, tuberous-rooted *Begonias*, *Begonia semperflorens*, *B. Haageana*, *B. Lucerna*, *B. carminata*, *Salvia splendens*, *Impatiens Oliveri*, *I. Balsamina* (Balsam), *I. Sultanii*, *I. Holstii*, *Humea elegans*, *Browallia speciosa* major, *B. viscosa*, *Chironia ixifera*, *C. floribunda*, *Abutilons*, *Lantana salvifolia*, *Celosia cristata* and its variety *pyramidalis*, *Agapanthus umbellatus* (blue and white), *Exacum macranthum*, *E. affine*, *Gilia coronopifolia* and *Trachelium coeruleum*.

FRUITS GATHERED BY A NEIGHBOUR: *W. F.* The fruit which has fallen in your neighbour's garden belongs to you, and, strictly speaking, you are entitled to go in and retake it, provided (a) you first ask the owner's permission, (b) you stay no longer than is necessary, and (c) you do not break down the hedge. If the permission is refused, you can then act in this way without permission. But you have no right to insist upon your tree overhanging your neighbour's garden, and, if you adopt a hostile attitude, he might make reprisals by insisting on his strict rights and cutting your tree back to your garden. It

pots. An old-fashioned recipe for Melon marmalade is as follows:—Take large citron Melons, quarter, and remove the seeds. Weigh the Melons, and to every pound allow a pound of double refined loaf sugar. To every three pounds of Melons allow two Lemons and a teaspoonful of ground white ginger. Grate the Melon on a coarse grater, not too close to the rind. Grate off also the yellow rind of the Lemons, and add, with the ginger, to the sugar. Mix all the ingredients in a preserving kettle, set this over a moderate fire, boil, skim, and stir until the preserve is very thick and smooth. Place it in the jars while still warm, and cover the jars with a double round of tissue paper.

NAMES OF FRUITS: *W. R.* It is not possible to recognise with certainty such immature fruits.—*J. Gregg.* The Plum resembles St. Catherine.—*W. W. T.* The Red Pear known as Herefordshire Perry Pear.—*E. E. H.* 1, Send again when fully grown; 2, Wealthy; 3, Culen.—*Pears.* 1, Beurré de Mérode (syn. Doyenné Bossoch); 2, Joséphine de Malines; 3, not recognised.—*B. Iver.* Clapp's Favourite.—*Anxious.* 1, Peasgood's Nonesuch; 2, Stirling Castle; 3, Hitchin Pippin; 4, Scarlet Golden Pippin; 5, King of the Pippins; 6, Schoolmaster.—*Newman Anxious.* 1, Probably Early Joe—there is very little difference between this variety and Quarrenden; 2, Duchess of Oldenburg.—*C. Best.* 1 and 3, Decayed; 2, Beurré d'Amanlis.—*T. T.* Prune Pêche; 2 and 3, Bryanston Gage. The Figs were smashed in transit.

NAMES OF PLANTS: *W. W. C.* We do not recognise the variety of Pelargonium, nor do we undertake the naming of varieties of florists' flowers. Send to a nurseryman who specialises

tive would be to shoot the birds; but it is a pity to kill them unless absolutely necessary, as starlings are very useful in destroying insect pests.

TOMATOS YELLOWISH: *W. W. C.* There is no disease present in the Tomatos, which are ripe and well grown. The yellowish colour is due to a lack of potash in the soil. Owing to the war potash manures are difficult to obtain, but burnt garden refuse or wood ash contains potash, and some of the ash produced in this way should be mixed with the soil next season.

WATER CRESS: *G. C. J.* Water Cress (*Nasturtium officinale*) may be grown in moist soil in cool situations, but it is usual to cultivate the plants for market in shallow "beds" through which a stream of clean water runs at a rate not exceeding half a mile to one mile per hour. The beds must be almost level from one end to another, with just sufficient fall to cause a steady and regular flow of fresh water. River or canal water, if clear and clean, is suitable; indeed, in many parts of southern England Water Cress beds are made in shallow streams, or in beds into which water is drafted from an adjoining river or canal by sluices. In some places water is obtained from a depth of 100 feet to 150 feet by means of artesian wells. In such cases, however, the water should pass through a good stratum of chalk or limestone, as the effect of the lime seems to give better results. The beds may have either a clean shingly bottom with from 4 to 6 inches of water overlying them, or they may have muddy bottoms 2 to 3 feet deep. In the latter case care must be taken to regulate the supply

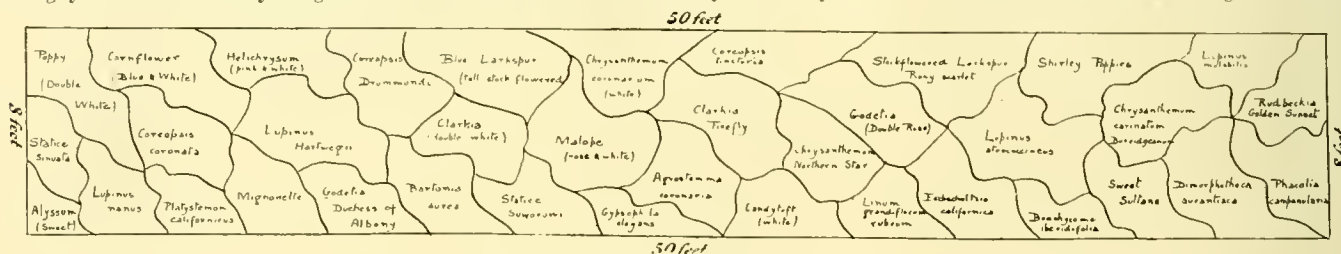


FIG. 57.—BORDER PLANTED WITH ANNUALS.

would, therefore, be wiser to settle the matter amicably.

GARDENER'S NOTICE: *J. B.* We consider that your status is that of a head gardener, and, as such, you would probably be entitled to receive (and bond to give) a month's notice. If the case were taken to the Courts, it would be decided on its merits, and probably the custom of the district would be taken into account. It would be better for you, if possible, to settle the matter with your employer himself, but we certainly think you should receive a month's notice, or a month's wages in lieu thereof.

LATIN NAMES: *L. J. A.* *A Glossary of Botanical Terms*, by Prof. B. Daydon Jackson, would be suitable for your purpose. *The Dictionary of Gardening* gives the meanings of a number of Latin plant names. The first-mentioned book can be obtained from our publishing department, price, post free, 7s. 10d. *The Dictionary of Gardening* is out of print, but you could probably obtain a copy from the second-hand booksellers.

LEMON AND MELON JAM: *L. L., Swansea.* The following is one recipe for Lemon preserve:—To each six pounds of Lemons take nine pounds of sugar. Peel the Lemons, cover the yellow parings with water and boil until tender. Drain, allow to cool, and then shred the parings finely. Meanwhile, halve the peeled fruit crosswise, and press out the juice and soft pulp. Cover the shells of white pulp remaining with three pints of cold water, and boil for half an hour. Strain off this liquor and add it to the juice and soft pulp, with the yellow rinds. Boil all together for ten minutes, then add heated sugar; boil down to the desired consistency, and place, while still very hot, in the

in Pelargoniums and who has means of comparing your variety with those in his collection.—*C. Luxford.* 1, Begonia, garden variety; 3, Rosa moschata (Musk Rose); 4, Solidago lanceolata; 5, Senecio clivorum; 6, Salix purpurea; 8, Hypericum patulum. The numbers 2 and 7 were detached; the yellow-flowered plant is Senecio tanguticus, the other Campanula primuloides.—*D. B. A.* The "Aesculus" is Castanea sativa; the other specimen is Tilia platyphyllos var. asplenifolia.—*H. D.* 1, Juniperus communis; 2, Picea pungens; 3, Abies nobilis; 4, Picea excelsa var. inverta; 5, Abies nordmanniana; 6, A. grandis.—*A. B. C.* Euphorbia jacquiniiflora.—*G. R. Clayton.* 1, Hymenocallis littoralis, often called Pancherium in gardens; 2, Panax Victoriana; 3, Dracaena Sanderiana; 4, probably Eucharis candida; send when in flower; 5, Justicia carnea; 6, Maranta Makoyana.

PLANTING A BORDER OF ANNUALS: *E. d'L.* The plan reproduced in fig. 57 outlines a scheme for planting your border with annuals. The size of the groups could be made larger or smaller as desired. If you wish to form an edging, such subjects as Mignonne, Candytuft, or Dwarf Nasturtiums might be used.

ROSE DISEASED: *H. G.* The black growth on your Rose tree is a fungus which feeds on the honey-dew deposited by aphides. Keep the Rose trees free from aphid next season by spraying them in the spring with an insecticide.

STARLINGS IN A BAMBOO GARDEN: *J. H.* One way of ridding your Bamboo garden of the starlings would be to let off a number of squibs or rockets in the garden just before the birds go to roost. This plan has been found very successful in the United States. If this method does not succeed in your case another alterna-

of water by inlets at the higher end, and also at the sides, so as to completely cover the mud, otherwise channels will form a zig-zag course through the beds and large patches of mud will become high and dry. The beds may be any convenient lengths, up to 100 yards or more, but should not be more than 3 or 4 yards wide, as it is necessary, especially in the case of muddy bottoms, to place stout planks across from one side to the other to facilitate such work as cutting and cleaning. There are two kinds of Water Cress grown in England—the "brown" and the "green." The brown Cress (recognised by the purplish tint on the leaves) is in season in winter and spring, and flourishes in clean canal or river water. The green Cress grows best in spring water that has passed through a chalky subsoil, and is generally in season when the brown Cress is over or running to seed. The crop is cut about three times a week. Stalks, leaves and other rubbish must be cleared away from time to time, as rotting vegetation would spoil the crop. Water Cress is most readily propagated from cuttings. Pieces with roots attached are simply pulled off and placed in rows across the new bed that has been cleaned out for their reception. Each year about half the number of beds are cleaned out and planted, while the others are in bearing. If this is not done the plants become choked with decaying vegetation, Duckweed, and Spirogyra.

Communications Received.—*J. H.*—*F. O.*—*R. L.*—*L. W.*—*N. R.*—*S.*—*and*—*S. F.* and *S. M.*—*B. A.*—*E. H.*—*D. W.*—*E. T.*—*R. B.* of *A.*—*J. B.*—*H. M.*—*W. O.*—*B. R.*—*G. J.*—*W. J.*—*W. L.*—*Mrs. D. A.*—*G. M.*—*T. V.*—*A.* and *Cie.*—*E. J. H.*—*F. W. C.*—*S. E.*—*F. A.*—*J. L.*—*J. G. T.*—*A. M.*

Gardeners' Chronicle

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STOCKS FOR ROSES.

THE rosarian has now considerable choice of stocks for budding in the case of dwarf Roses. For standards, the Briar stock from the hedges still holds the field. Some nurserymen have introduced special stocks for tall standards of climbing Roses, some have used rugosa stocks, and doubtless, experiments in other directions have been made, but so long as the Dog Rose is to be had from our hedges it is likely to continue the chief if not the only source of standard stocks to be used by amateurs. There are only two precautions that need be mentioned with regard to these; one is, to get them in early enough. Hedging and ditching usually take place during winter, which is no doubt the convenient time for collecting stocks, but this generally means that the stocks are laid in during the winter and only planted in spring. If this is done some failures must be expected, and it is better to have the Briars specially collected and planted during the second half of October or early November. The second precaution is to see that the stock is properly trimmed before planting. Briar stocks often arrive with a great knob of old wood attached to the root-end, and this must be carefully removed; for if left, it either dies, and is attacked by fungi, or it lives and continually throws up suckers. For dwarfs, on the contrary, there is a choice of some ten or more different stocks, but I can only mention those I have myself tried. Of these, the chief are the three old-established stocks, the Manetti, the seedling Briar, and the Briar cutting.

The Manetti stock was raised in Italy by Signor Manetti, of the Botanic Gardens, Monza, and seems to be a hybrid from *R. fraxinifolia*, a variety of *R.*

blanda. It is propagated by cuttings, and is stated to have been first introduced into this country by Mr. Rivers so long ago as 1835. It has some advantages over all other stocks in that it pushes early and the sap will run quite late, so that it may often be budded down to the end of September. For this reason it is often well to have a few stocks of this variety. Moreover, during the first year after budding the growth is often very good, but it is generally agreed that it should not be used for Tea Roses. Some other Roses also do not seem to live on Manetti so long as on the Briar; but this is not a point of great importance if it is only intended to keep the Roses for one or two years.

The seedling Briar always seems to me one of the most satisfactory of stocks; the choice between it and the Briar cutting will doubtless depend on the character of the soil, and can best be determined by trial. In my garden the seedling Briar gives better results, and some of my friends, even on heavier soil, have had the same experience; but it seems probable that the heavier the soil the more likely is the Briar cutting to be found suitable. Some growers like to use both cuttings and seedlings, thinking that the plants on the Briar cuttings come into flower earlier than those on the seedling stock, and thus prolong the flowering season. I have kept no records, and cannot, therefore, write with certainty of the relative dates of flowering of plants on cutting and seedling; but judging merely from general observation I am inclined to think that plants on the seedling Briar are rather more variable than those on the cutting Briar in their times of flowering.

Some object to the seedling Briar on the ground that it is difficult to bud, the stem just below the crown, where the bud is inserted, being frequently crooked. This difficulty may be met to a great extent by care in planting the Briar seedlings. The length of the root-stem available for budding is no doubt considerably less in the seedling than in the cutting, but I have seldom known any great difficulty in finding room to insert the bud in the root-stem. Where difficulty arises it can usually be traced to careless planting. Care should be taken to see that the main root is inserted straight and not bunched up, and all seedlings with short or crooked necks should be rejected.

The stock of *Rosa laxa* is of comparatively recent introduction, so far as I am aware. I first used it some six or seven years ago, on a suggestion made to me that it might be useful in my soil for some of the more weakly yellow Roses. The plants used are seedlings of a year old, as in the case of the seedling Briar, and the plant makes very big fleshy roots with thick bark. Planted in moderate or poor soil, and budded early, I think it makes a very satisfactory stock, but if it be put into rich Rose soil it grows so large, and the bark gets so thick, that it is extremely difficult to bud, and in this condition does not, I think, make a very good stock. Where the soil is poorer, this diffi-

culty does not arise, but buds must then be inserted and the budding of this stock completed early in August, after which the sap does not seem to run so well. The after-growth of plants budded on *laxa* is, I think, very good. I have made no careful tests of the comparative value of this and the Briar, but in the case of two beds of *Marquise de Sinety*, in one of which the plants are for the most part on *laxa* and in the other on Briar, those on the *laxa* are, at the moment, rather the best and biggest plants. I am under the impression that the *laxa* stock likes to carry a big head, and for this reason may perhaps prove useful for climbers. I have no complaint to make of the longevity of plants on *laxa*, but my experience in this respect only extends as yet to plants that have not been moved after planting. It is a stock of considerable interest, and probably has a future before it, in the course of which, perhaps, it will be ascertained for what purpose it is best adapted.

A delightful stock for amateurs is called "Gamon's thornless." In many of its characters as a stock it seems to be intermediate between the Briar and *laxa*. Like the latter, it will grow too vigorously in good Rose soil, but not so readily, and it has the rather fleshy bark which makes it easy to bud while the sap is running freely, and the complete absence of thorns is an advantage for the person of the operator. I have used this stock for four or five years, and am very pleased with it, but I doubt if it will supersede the Briar seedling; it is usually employed as a year-old plant, though I believe cuttings may also be had, but I have no experience of them.

The multiflora or Polyantha stock is interesting, and deserves more attention than it has hitherto received, particularly for Roses intended to be grown in pots. As has recently been pointed out by a French writer, this stock possesses the merit of not producing suckers. Teas, and some hybrid Teas, do well on it, but perhaps it is not so well adapted for Hybrid Perpetuals. The stocks are obtained from cuttings, and the bark is rather thin and brittle, so that it is easily injured, and requires a little care in budding. When the stocks have been transplanted to the place where they are to be budded they should not be worked too soon, for it is generally well into the summer before the bark will lift freely. On the contrary, they continue growing late, and can be used, therefore, when it is desired to bud from the secondary growths. I have only recently employed this stock, and can therefore give no opinion of the longevity of Roses budded upon it, but Mr. Pemberton states that he has had Roses on it doing well twelve years after they were budded, moved when they were seven or eight years old.

De la Grifferaie, introduced by M. Vibert in 1845, is a multiflora hybrid, often used by foreign growers. It is a very strong grower, too strong for many purposes, employed chiefly for multiflora hybrids, both climbers and dwarfs, and occasionally for China Roses. I have only

tried it in two or three cases, and do not think it is a stock the amateur need concern himself with. *Rosa rugosa* is sometimes used by foreign firms as a standard stock. I have used it occasionally for budding other rugosas. The stocks, if desired, may readily be obtained from suckers, but I have not found cuttings strike very freely.

Other stocks occasionally used are *R. indica* major (chiefly used abroad), *D. rubiginosa*, the Sweet Briar, and *R. Wichuraiana*, while *R. rubrifolia* has recently been recommended, but I have no personal experience of its use.

It is always best to buy stocks from the trade if more than a dozen or so are required. Anyone, however, who cares to do it may raise them for himself. The Briar seedlings are raised from the hips of the wild Rose. These are collected, placed in water, and when soft, broken up, and the seeds rubbed or washed

cise, and it is certainly easier to ask questions on this subject than to answer them. One would like to know, for instance, whether different stocks affect the liability of the budded plant to disease, or its power of resisting it; and whether different practice in pruning should be applied to Roses on different stocks. My present impression is that Roses on very free-growing stocks resent hard pruning more than those on the Briar, but this impression arises rather from surmise than from recorded observations. Then, do various stocks behave differently in different parts of the country and in different soils? It is generally thought that they do, but I fancy that the view is based mainly on the fact that it is found that capable rosarians in different counties have formed a preference for different stocks. To answer these questions the observations of amateurs in different parts of the country are necessary, and these observations should not be confined to Roses intended for exhibition as single blooms. Moreover, to be of value, they should take place over a series of years. *White Rose*.

NEW OR NOTEWORTHY PLANTS.

A HYBRID LARCH.

A CONSIDERABLE number of broad-leaved trees unknown in the wild state but common in cultivation have been recently shown to be of hybrid origin. Some of these originated after the introduction into Europe in the seventeenth and eighteenth centuries of American trees, which, growing near closely allied European species, gave rise by cross pollination to peculiar seedlings that were selected and propagated by nurserymen on account of their vigour of growth. Occurring sporadically and spontaneously in gardens and nurseries, the real origin of these new trees was unsuspected; and they were usually considered to be varieties due in some mysterious way to the fact of cultivation. The London Plane, Black Italian Poplar, and some forms of Lime and Ash are examples.

Hybrid Conifers seem to be of much rarer occurrence, only a few having been hitherto recognised. One of the most interesting, which I have long suspected to be of hybrid origin, is the peculiar Larch which was first published by Aiton under the name *Pinus pendula*, and subsequently referred to its correct genus as *Larix pendula*, Salisbury.*

The original tree from which Solander drew up the description for Aiton grew first at Peckham, whence it was removed to Mill Hill by Peter Collinson, who took up his residence there about 1740. This tree attracted much attention on account of its extraordinary vigour, a common feature of first-generation hybrids. Lambert said "it was the finest and largest tree I have ever seen, bearing great quantities of cones with ripe seed annually." Sir James E. Smith stated that it "was cut down about 1800 to make a rail by its (then) sapient possessor. The abundance of seeds that it annually produced might have been a far more lasting source of profit, as few exotic trees are more worthy of attention." Aiton, Lambert and Salisbury all considered *Larix pendula* to be a native of North America, but it is evident that the only specimens with which they were acquainted were the tree at Mill Hill and the seedlings raised from it. It was brought into cultivation by Loddiges, who had large plantations of trees about 8 feet high, both of *L. pendula* and of the true American Larch (*L. americana*), in his nursery in 1805. Lambert stated that cones of both species were annually sent from America to

Loddiges, one under the name of Red Larch, the other under the name of Black Larch. Of this there is no confirmation, as *Larix pendula* has never been seen in North America, where on the eastern side of the Rocky Mountains only one Larch (*L. americana*) is known to exist. The erroneous supposition that *L. pendula*, as well as *L. americana*, occurred in the wild state in North America was current in books for many years, though unsupported by specimens or by the evidence of any competent observer.

At the time (1739) when the original tree of *L. pendula* was first noticed, only two species of Larch, *L. europaea* and *L. americana*, were known, and both were in cultivation in England, the latter at Peckham from seeds brought from America by Peter Collinson.† *L. pendula* is plainly a hybrid between these two species, as is evidenced by its botanical characters, and by the fact that its seedlings are not uniform but exhibit an extraordinary range of variation, forms being met with intermediate in all stages between the two parents. This is well exemplified by a row of sixteen trees of *L. pendula* at Murthly, all different in bark, twigs, cones, etc., which are part of a batch of seedlings that were raised as "Red American Larch"§ by Messrs. Benjamin Reid, of Aberdeen, in 1874. A tree at Cullen of the same lot differs from the Murthly specimens. Two trees in the Cambridge Botanic Garden are different from each other and from the preceding, and so on.

The two parent species and the hybrid are distinguishable as follows:—

1. *Larix americana*, Michaux (*Larix laricina*, Koch). A small tree, with the bark separating on the surface into small appressed scales. Young branchlets glabrous, covered with a whitish waxy bloom in the first year, pink and glaucous in the second year. Leaves slender, rounded above, and with one or two broken stomatic lines near the apex; lower surface deeply keeled with two stomatic lines in a deep groove on each side of the keel. Cones small, globose, $\frac{1}{2}$ inch long; when ripe, bright brown with an orange tinge; scales few, 12 or 13, arranged in 2/5 phyllotaxis, glabrous externally, with a bevelled, rounded, minutely crenulate upper margin; bracts concealed (except at the base of the cone) between the scales,

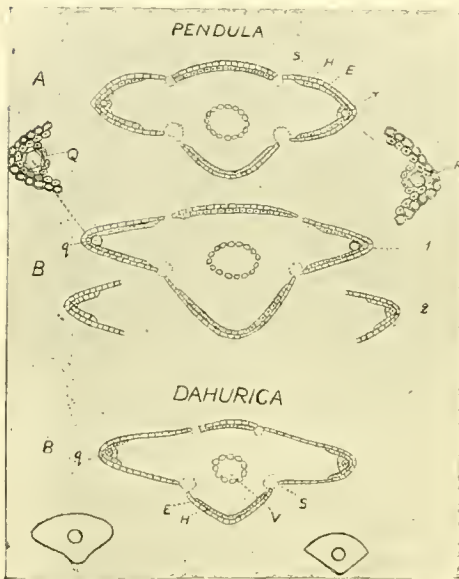


FIG. 58.—CROSS-SECTION OF LEAVES OF *LARIX PENDULA* AND *LARIX DAHURICA*.

A, leaf of long shoot; B, leaf of short shoot; R, r, resin canal, well developed in the former; Q, q, resin canal variable, often obsolete or absent, rarely present in the latter; S, stomatic opening; E, epidermis; H, hypoderm; V, fibre-vascular bundle (all highly magnified).

out. They generally take two years to germinate, and a large proportion never come up.

Cuttings of Briars, Manetti, or multifloras for stocks should be made about a foot long, or a little less, all the thorns removed, and each bud, except the two top ones, carefully cut out with a sharp knife. If the buds are only rubbed out, the side buds are sure to develop, and it will be found wearisome work if more than a very few are wanted. When prepared the cuttings are inserted in the ground in autumn, 2 or 3 inches apart, and left for a year to form roots, after which they may be removed to the place where they are to be budded. At least twice as many cuttings should be inserted as the stocks likely to be wanted.

I never plant my dwarf stocks till February, and I have planted them down to the end of March with quite good results. If I happen to procure them earlier, I merely heel them in together until I want them. Considerable growth is not wanted the first year. In planting, it is generally well to shorten any long roots considerably, and, with the seedling Briars, all the roots should be reduced, particularly the tap-root. It is better to pull up stocks that have failed to "take" rather than to try to bud them afresh in the following year, as they are not satisfactory for budding a second year.

We have much general information about stocks, but very little that can be considered pre-

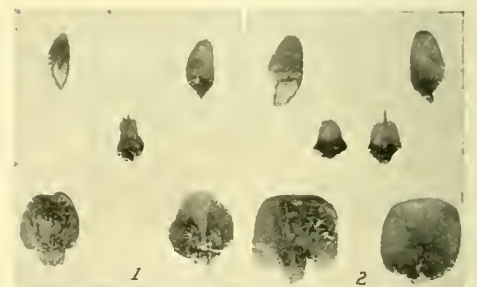


FIG. 59.—SEEDS, BRACT AND CONE-SCALES OF (1) *LARIX DAHURICA*, (2) *LARIX PENDULA* (ALL NATURAL SIZE).

minute, scarcely exceeding one-quarter the length of the scale, wide and winged at the base, contracted into a quadrate or trapezoid lamina, with a truncate mucronate apex. Seeds small, $\frac{1}{8}$ inch long, with pale, short, broad wings.

2. *Larix europaea*, De Candolle. A large tree with bark scaling off in irregular plates. Young branchlets green and without waxy bloom

* See Miller, *Gard. Dict. Abridged*, III. (1740).

† Early writers called *L. americana* "Red Larch" and *L. pendula* "Black Larch," names based on the colour of the bark of old trees. Later the names seem to have been reversed, and Sir C. Strickland, who had good examples of both kinds at Boynton, always maintained that the "Red Larch" was *L. pendula*, and the "Black Larch" *L. americana*. See *Gard. Chron.*, XIX., 390, 494 (1890).

‡ Larger cones, $\frac{3}{4}$ in. long, with about 25 scales arranged in 3/5 phyllotaxis, are occasionally found in American trees; and these are difficult to distinguish from the cones of *L. dahurica* except by their colour and the shape of the bract.

* *Larix pendula*, Salisbury, in *Trans. Linn. Soc.*, VIII., 314 (1807); Lawson, *Agric. Man.*, 387 (1836); Forbes, *Pinet. Woburn*, 137, t. 46 (1839). *Pinus pendula*, Aiton, *Hort. Kew.*, III., 369 (1789); Lambert, *Pinus*, I., 56, t. 36 (1803). *Larix americana*, Michaux, *v.r. pendula*, London, *Arb. et Frut. Brit.*, IV., 2400 (1838).
† Cf. Loudon, *op. cit.*, 2401.

in the first year, becoming greyish-yellow in the second year. Leaves not so deeply keeled beneath as in *L. americana*; upper surface with one or two continuous stomatic lines on each side of the median line; lower surface with three stomatic lines on each side of the keel, giving the foliage a more bluish tint than that of *L. americana*. Cones large, $1\frac{1}{2}$ inch or more long, ovoid-conic, light brown when ripe, the exerted tips of the bracts being plainly visible: scales numerous, 40 or 50, arranged in $3/8$ or $5/13$ phyllotaxis, rounded, entire or emarginate at the apex, with a thin non-bevelled margin, outer surface brown-pubescent except near the apex; bract exceeding half the height of the scale, lanceolate, widest near the base and gradually tapering to a narrow truncate apex, with a conspicuous mucro. Seeds $\frac{1}{4}$ -inch long, with long brownish wings.

3. *Larix pendula*, Salisbury. (See figs. 58, 59 and 60.) The original tree, of which there are specimens in the British Museum, is readily distinguishable from either of the preceding by its cones, about 1 inch long, ovoid-conic, orange-brown in colour, the tips of the bracts not being visible except at the base. Scales about 30, in $3/8$ phyllotaxis, apex rounded, margin erenate and bevelled, outer surface with brown pubescence in its basal half. Bracts concealed, about one-third the length of the scale, oblong or panduriform with a truncate emarginate apex and long mucro. Seeds intermediate in size between *L. americana* and *L. europaea*.

In the numerous seedlings of the original tree and their descendants, great variation occurs, all possible combinations of the characters of the two parents being observed. The cone varies in size from $\frac{3}{4}$ to $1\frac{1}{2}$ inch in length, with few or numerous scales (24 to 50), usually arranged in $3/8$ phyllotaxis, their outer surface being either densely or only slightly pubescent, while the bevelled edge is rarely absent. The bract is variable in form, but is usually concealed and much shorter than in *L. europaea*. The twigs are generally pink, rarely glaucous, occasionally greyish-yellow. In some examples the bark is finely scaled, but in other cases the bark is like that of the European Larch.

The vigour of the original tree does not seem to be preserved in any of its descendants, most of them being considerably shorter and much smaller in girth than European Larch of the same age alongside them. Their habit is variable, but they become flattened on the top at an early age and are apt to bear peculiar de-flexed branches.

Certain forms of *L. pendula* are difficult to distinguish by botanical characters from *L. dahurica*, the wild Larch of Eastern Asia, which was not introduced into England till 1827 and was quite unknown in 1739, when the original *L. pendula* was first noticed. This similarity of certain trees led first the Kew authorities and afterwards myself in 1907 to identify *L. pendula* with *L. dahurica*; and this was agreed to by Mayr, who had seen the latter in the wild state and also under cultivation at Grafth. It will be well to describe this species:—

4. *Larix dahurica*, Turczaninow. (See figs. 58, 59 and 60.) A tree closely allied to *L. americana*, of which it is the Asiatic representative.** The leaves, twigs, seeds and bark are identical, but the cones are different, those of *L. dahurica* being usually larger ($\frac{3}{4}$ inch long), with more numerous and often smaller scales, which are arranged in $3/8$ phyllotaxis, pale brown when mature, variable in form, rarely orbicular (as in *L. americana*), but usually narrowed towards the truncate or emarginate apex, thin and rarely bevelled

in margin, puberulent on the outer surface near the base. Bract with a narrow claw and an ovate lamina, gradually narrowing to a rounded (not truncate) apex, with an inconspicuous mucro.

Larix pendula, on account of its lack of vigour, cannot be recommended for economic planting, but it is interesting on account of its history. The finest specimen, which is at Woburn,†† measured 86 feet high by 6 feet 7 inches in girth in 1905. Seedlings have been raised from this tree, but a large percentage of the seed is unfertile. A tree similar in size and height, having smooth, small-scaled bark, grows at Beauport, Sussex. There are two good specimens, 80 feet by 5 feet, at Stanage Park, Hereford, which were planted under the name *Larix pendula* in 1836. Very old trees over 70 feet high and 7 to 9 feet in girth are growing at Boynton, which Sir C. Strickland, who called them "Red Larch," believed to have been planted in 1780. A tree (fig. 61) at Bay-



FIG. 60.—CONES OF (1) *LARIX PENDULA* FROM FOUR DIFFERENT TREES, SHOWING THE VARIATION IN SIZE AND FORM; (2) *LARIX AMERICANA*; AND (3) *LARIX DAHURICA*, MANCHURIAN SPECIMEN.

fordbury, 56 feet by 5 feet in 1905, was planted in 1840. It has bark like the common Larch planted beside it, which much exceeds it in size. A tree similar in size, with fine-scaled smooth bark, is growing in the Cambridge Botanic Garden. An old tree at Dalkeith was 52 feet high and 6 feet in girth in 1913. Smaller trees grow at Ribston Park, Yorkshire; Denbies, Surrey; and Cullen, Banff; there are also several good specimens in the Larch collection at Kew. The row of trees at Murthly already referred to averaged 40 to 45 feet high and 3 to 4 feet in girth in 1905.

A remarkable form of *Larix pendula* which may be named var. *repens*†† Henry, occurs at Henham Hall, Suffolk. This is grafted on a European Larch stock, which forms a trunk about 6 feet high and over 7 feet in girth. It divides into numerous branches, which extend

horizontally for a distance of about 100 feet supported on Larch poles. None of the branches rises more than 3 feet above this level. This peculiar horizontally-creeping sport dates from about 1800 and bears cones. A smaller specimen of the same kind grows in the Cambridge Botanic Garden, and is probably a graft from the Henham tree. It bears cones distinctly different from those of the upright *L. pendula* beside it. A. Henry.

ORCHID NOTES AND CLEANINGS.

HYBRID ORCHIDS.

Two new and handsome hybrids are sent by Mr. F. Jones, Orchid-grower to Mrs. Bischoffsheim, The Warren House, Stanmore.

LAELIO-CATTLEYA ZOUAVE (*L. crispata* × *C. Atalanta*) is a very beautiful flower taken from a spike of four blooms. The flower is 7 inches across; the sepals and petals are white tinged and veined with purplish-rose. The lip is a fine feature, the base being white with the tips of the expanded side lobes violet-purple, and the broad front lobe similarly coloured but with a crimson shade. Fine substance is inherited from *C. Leopoldii* through *C. Atalanta*.

LAELIO-CATTLEYA ROSEITE (*L.-C. Pallas* × *C. Warszewiczii*).—A large flower and an improvement on *L.-C. Pallas*; the sepals and petals are very pale lilac colour, the lip dark purplish-rose with white and yellow veining from the base.

LAELIO-CATTLEYA CASTANEA (*L.-C. Marquis de Wavrin* × *C. Hardyana*), from J. Gurney Fowler, Esq. In the form of the lip this new hybrid shows the influence of *L.-C. elegans*, which, with *C. Hardyana*, produced *L.-C. Marquis de Wavrin*; but the second introduction of *Hardyana* enlarges all the parts. The colour is claret-purple, the lip being the darker shade.

From Messrs. Sander and Sons we have received:—

LAELIO-CATTLEYA SUVLA (*L.-C. Endymion* × *C. Dowiana aurea*).—A charming flower with broad bronzy-yellow sepals and petals tinged with rose, and showy lip of dark maroon colour with fine gold lines from the base to the centre. The *L.-C. Endymion* used is *C. Gaskelliana* × *L. tenebrosa*, and not *Endymion II.* (*callistoglossa* × *luminosa*).

CATTLEYA BRILLIANT (*Kienastiana* × *Hardyana*).—This is a beautiful flower, nearest to *C. Hardyana*, but with a fine expansion and colouring of the lip obtained from *C. Luddemanniana*, which, with *C. Dowiana aurea*, produced *C. Kienastiana*.

CATASETUM BUNGEROTHII VAR. MRS. TOM FIELDEN.

At the meeting of the Royal Horticultural Society on August 31, 1915, Sir Jeremiah Colman, Bart., showed a pure white form of *C. Bungeorothii*, which received a First-class Certificate (see p. 159) as *Catasetum Bungeorothii* white variety. The flowers are whiter than, although of the same class as, the type illustrated in *Gard. Chron.*, January 29, 1887. *Catasetum Bungeorothii* was originally described by Mr. N. E. Brown and figured in *Lindenia*, t. 21. Many forms have appeared subsequently, and several have been figured. The species brought with it by importation a great number of varieties of *C. splendens*, which have been described as natural hybrids between *C. Bungeorothii* and *C. macrocarpum*.

C. Bungeorothii is said to be identical with the earlier described *C. pileatum* (Reichb. f. *Gard. Chron.*, 1882, I., p. 492), but the evidence on this point is slight, and although the Royal Horticultural Society in its later lists adopts the name *C. pileatum*, the Orchid Committee readily accepted the one shown on August 31 under its well-known garden name.

* In Elwes and Henry, *Trees of Great Britain*, II., 379-382, part of the description and the account of the cultivated trees appertain to *L. pendula*. *L. dahurica* grows badly in England; some trees at Kew, which came from Petropgrad in 1886, being very small and miserable.

** *Larix alaskensis*, Wight, wild in south-western Alaska, seems to me to differ in no respect from small-coned forms of *L. dahurica*, which occur in eastern Asia.

†† *Trees of Great Britain*, II., plate 206, shows well the remarkable smooth and fine-scaled bark of this old tree.

†† A specimen of this tree, labelled "Pinus repens, Henham," and dated "Hooker's herbarium, 1867," is preserved at Kew.

AMERICAN NOTES.

THE AVOCADO PEAR IN CALIFORNIA.

INTEREST in the cultivation of the Avocado Pear has assumed such proportions in California that an association has been formed to furnish information to growers and to enlighten the public on the merits of the fruit. The association includes the leading growers of the State. The preliminary meeting resolved to discontinue the use of the name Avocado and substitute Ahuacate as being more correct. Protests against

Webber, a leading authority and chief of the University of California Experiment Station, Riverside, advises Orange and Lemon growers to plant Avocado trees, and says that he expects to see this fruit become as common as Potatoes.

Exceptional prices have been obtained for all the Avocados grown so far. The University of California has issued a bulletin on the subject, and in general the outlook is considered bright. The high food value of the fruit, together with its delicious taste, will, it is believed, provide for it an almost unlimited market. *F. O. Popenoe.*



FIG. 61.—*LARIX PENDULA* AT BAYFORDBURY.
(See page 179.)

this effort to change the name have, however, been numerous, and it remains to be seen whether the old, though incorrect, word will not stand.

The growing of budded Avocado trees is becoming an important industry. It is, however, found that there are many difficulties, and the trees are dear. This may militate against orchard planting to some extent, but many successful orchardists of Southern California, where the tree grows well, are inclined to plant at least a small acreage, especially in view of the present apparent over-production of Oranges and the incidental low prices for that fruit. Dr.

CURRANT FAY'S PROLIFIC.

I NOTICE the appreciation of Fay's Prolific Currant on p. 98. This variety, a native of New York State, is a leading market sort here; the long stalk facilitates gathering, and the handsome fruit and mild flavour appeal to consumers. Another handsome Currant is Red Cross, which forms a long cluster of large, richly-coloured berries, with a long stem. The fruit has a mild, sub-acid flavour, and the plant is so vigorous and productive that with some market growers it is taking the place of Fay's Prolific. Both varieties are excellent in the home garden. *Emily Taplin Royle, Maywood, New Jersey.*

NOTICES OF BOOKS.

AN ILLUSTRATED FLORA OF SOUTH AFRICA.*

A SHORT notice of the first volume of this interesting and attractive work was published in *Gard. Chron.*, February 14, 1914, p. 104. Vol. IV., which is the next to appear, deals exclusively with Monocotyledons. The Cape Monocotyledons are so diversified, and of such surpassing interest, that the present volume will appeal especially to gardeners.

Over 800 species of Liliaceae are South African, and the family contains many highly ornamental plants, including the genera:—*Aloë*, *Kniphofia*, *Lachenalia*, *Asparagus*, *Haworthia*, *Gasteria*, *Bulbine*, *Albuca*, and *Ornithogalum*. There is an interesting photograph of *Ornithogalum thyrsoideum*, Jacq.; a plant common in the coast districts. It possesses remarkable vitality, for if the peduncle be cut when the lowest flowers are just developed, all the others will gradually open and remain fresh for weeks, even when kept without water.

There are more than 170 species of South African Amaryllidaceae, including the genera *Nerine*, *Curculigo*, *Hypoxis*, *Cyrtanthus*, *Gethyllis*, *Amaryllis*, *Barbarea*, and *Haemanthus*. The genus *Nerine* is endemic in South Africa. The most beautiful and best known species is *N. sarniensis*, called the Guernsey Lily. It is found on the rocky ledges of the mountains of the south-west, producing its leaves in winter, and flowers in the following autumn.

More than 400 species of Iridaceae are found in South Africa, many of them plants with beautiful flowers which are cultivated in Europe, and often improved by careful selection or hybridisation. The principal genera are *Moraea*, *Tritonia*, *Sparaxis*, *Gladiolus*, *Freesia*, *Watsonia*, and *Ixia*, but many other genera are also in cultivation.

The smaller family of the Musaceae is interesting as including the genus *Strelitzia* with four endemic species. Dr. Marloth states there are nearly 400 South African Orchidaceae, but Mr. Rolfe, in the *Flora of South Africa*, gives descriptions of nearly 500. Perhaps the palm of beauty must be awarded to *Disa uniflora*, the grandest of the terrestrial Orchids. Although the name *D. grandiflora* is more appropriate, it has to be abandoned on account of the priority of Bergius' name, published in 1767. Other fine Orchids are *Satyrium coriifolium*, a brilliant orange; *Disa longicornis*, a lovely blue; *D. secunda*, a delicate white; the brilliant blue *D. graminifolia*; and the fringed spider-like *Bartholina pectinata*, and *B. Ethelae*.

The great activity of botanists in South Africa is shown by the fact that in the genus *Aloë*, since the *Flora Capensis* was written, fifty new species have been described, and of these fifty very few are known in cultivation; many of these will probably be found valuable garden plants, and offer opportunity to some enterprising firm or plant-lover to introduce them. There is a very beautiful new *Kniphofia*, *K. tabularis*, now figured and described for the first time, from Table Mountain, by Dr. Marloth—this also would be an acceptable addition to gardens. There are forty-eight whole-page coloured illustrations in the volume, and also a number of monochromes and figures in the text. It is perhaps difficult to reproduce on paper the true brilliancy of a *Disa* or a *Nerine*, the living flower imparting an individual character to the light, but the plates as a whole are very successful, and add much to the value of the work.

The book reflects great credit on Dr. Marloth, and gardeners as well as botanists are much indebted to Lady Phillips for her munificent help towards its publication. Of the two remaining volumes to be issued, Vol. II. will be devoted to Dicotyledons, Rosales to Umbelliflorae, and Vol. III. to Dicotyledons, Sympetalae. *E. G. Baker.*

* *Flora of South Africa.* By Dr. Rudolf Marloth. 4to, 208 pp. Vol. IV. Monocotyledons. Price £2 2s. per vol. (London: Wesley & Sons.)

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLV).

PETITES NOUVELLES DE BELGIQUE.

LES Prunes sont très abondantes dans le pays de Namur. Les vallées de la Meuse et de la Lesse comptent de nombreuses plantations de Reines-claude dont les fruits sont très appréciés. Cette année les marchands en gros n'offrent pas plus de 10 fr. les 100 kilos, ce qui constitue un prix ridicule pour la Reine-claude. La campagne est nécessairement déficitaire étant donné le rendement minime de cette Prune de qualité.

Aux environs de Bruges, les Allemands réquisitionnent des quantités de légumes et de tous les coins du pays de nombreux chargements de Pommes de terre prendraient le chemin de l'Allemagne.

De tous côtés on transforme les fruits en confiture. Le sucre n'est pas cher car l'Allemagne se trouve dans l'impossibilité de se défaire de son stock à la suite de la mise en quarantaine du sucre par les Alliés. D'autre part, le beurre atteint des prix prohibitifs et on "confiturera" le pain au lieu de le beurrer.

On annonce aussi que les Allemands réquisitionnent toutes les racines de Chicorée-Witloof dite de Bruxelles, au prix de 25 fr. les mille kilos. Les contraventions sont punies d'un emprisonnement allant jusqu'à cinq ans ou d'une amende pouvant atteindre 20,000 marks. Il y a là probablement une confusion, le texte allemand que nous avons sous les yeux porte "Zichorien-wurzeln" racines de Chicorée, et sans doute ces réquisitions ne s'appliquent-elles qu'à la culture industrielle, pratiquée en Flandre en vue de la préparation, par torréfaction, de Chicorée à café. Dans le cas contraire les maraîchers brabançons pour lesquels la Chicorée de Bruxelles constitue la principale culture, seraient fortement atteints. La mesure frapperait vivement aussi la population belge qui escompte pour son alimentation en hiver, une bonne production de ce légume devenu indispensable dans la cuisine belge.

COMITÉ AGRICOLE ET HORTICOLE BELGE.

Nous avons annoncé la décision prise par M. Helleputte, ministre de l'Agriculture de Belgique, de créer en Angleterre un comité qui serait chargé de fournir aux organismes s'occupant de réunir des fonds et du matériel en vue de la restauration de l'agriculture et de l'horticulture en Belgique, des renseignements sur les exigences du pays après la guerre. Ce comité vient d'être constitué; outre ses rapports avec les comités anglais, il pourra aussi donner aux agriculteurs et horticulteurs belges réfugiés en Grande Bretagne, les conseils d'ordre technique qu'ils solliciteraient en vue de la reprise ultérieure de leurs exploitations.

Font partie de ce comité: Président, M. Lefebvre, député de Malines.

Vice-présidents: MM. Pollet, consul-général de Belgique et Mélotte, industriel.

Secrétaire: M. le baron J. de Rosée.

Trésorier: M. Van Orshoven.

Membres: Mlle. Rossignon, MM. Adriaensen, Collinet, Delville, de Spirlet, De Vreese, Dewez, Lekeu et Misson.

NOUVELLES DIVERSES.

TRANCHÉES FLEURIES.—Un officier belge donne dans une lettre publiée par le *XXe Siècle*, ces quelques détails intéressants:—"D'après votre lettre j'ai remarquée que vous vous faites une bien mauvaise idée de nos tranchées. Les fleurs n'y sont pas rares.

Chaque tranchée a son petit jardin. Les parados sont couverts de guirlandes de toutes couleurs où l'on voit diverses inscriptions: "Vivent les carabiniers" ou "Vive notre major." Et les tombes creusées sur place sont entretenues avec le plus grand soin." De son côté, notre confrère *Le Jardin* annonce que dans un prochain numéro il donnera des vues de tranchées transformées en potagers et en jardins fleuris dont certains sont entretenus avec un soin qui rendrait jaloux bien des amateurs. Enfin, aux bases anglaises, l'horticulture est également en honneur et de nombreux soldats y ont établi des jardins dont l'aspect riant témoigne de leurs capacités professionnelles, d'autant plus que les semis n'ont pu se faire qu'à partir du mois de juin, entraînant ainsi un retard sérieux dans la végétation.

MISSION HORTICOLE FRANÇAISE.—Il y a quelques jours une commission envoyée par le gouvernement français a visité les cultures fruitières du Worcestershire ainsi que les cidreries de cette région. La récolte des Pommes à cidre en Normandie est très abondante cette année et l'état de guerre a fait naître des craintes au sujet de la transformation des fruits dans le pays même. Il s'agissait donc pour la commission d'établir si un débouché pouvait être trouvé en Angleterre.

LE MOTOCULTURE.—La pénurie de main-d'œuvre en agriculture a fourni une nouvelle occasion pour l'emploi plus général des tracteurs mécaniques en agriculture. Un concours vient d'avoir lieu à Grigny (Seine et Oise) sous les yeux du Ministre de l'Agriculture de France. Le prix d'achat élevé des tracteurs rend leur emploi peu économique dans les petites exploitations, aussi le gouvernement français a décidé d'avancer aux syndicats de producteurs la moitié du prix des instruments dont ils se rendraient acquéreurs.

LES OGNONS À FLEUR EN HOLLANDE.—Nous avons annoncé qu'un bateau spécial avait été affrété pour le transport des bulbes hollandais destinés à la Russie. L'essai a été satisfaisant et un second bateau est parti la semaine dernière de Groningue à destination de la mer Baltique. Les bulbes des variétés communes s'écoulent cependant avec difficulté et on recommande dans certains cas de les donner en nourriture aux porcs, dont l'engraissement est très rémunérateur. Un mélange de bulbes à peau dure avec d'autres à peau tendre serait avidement mangé par ces animaux.

LES LÉGUMES HOLLANDAIS.—On sait que le gouvernement hollandais réquisitionne une certaine quantité de Haricots à un prix fixé d'avance, chaque fois qu'un permis pour l'exportation est accordé. La plupart de ces Haricots sont dirigés sur Geertruidenberg—en vue du salage—d'où, l'hiver prochain, ils seront distribués entre les grands centres. Dès à présent, les administrations de certaines villes font une enquête au sujet des quantités de légumes salés qui seront requis pour la consommation. Le gouvernement hollandais vient aussi d'inviter les exportateurs à faire connaître les quantités de choucroute et d'autres légumes salés qu'ils ont en réserve. Les renseignements sont demandés pour mettre les autorités à même de décider dans quelle mesure l'exportation de ces produits peut être autorisée.

LA RECONSTRUCTION.—La commission belge pour la reconstruction a organisé une nouvelle exposition de plans d'habitations à l'hôtel de ville de Gand. Il a été décidé de re-

construire immédiatement, suivant des plans d'ensemble, la localité voisine de Quatrecht, qui fut brûlée par les Allemands après l'engagement de Melle, en septembre, 1914. Les murs de la plupart des maisons sont restés debout mais il est à espérer que dans cette localité située en plein centre horticole, on pourra reconstruire en tenant compte des desiderata exprimés tant de fois en ce qui concerne la part à réserver autour de l'habitation rurale à la plante et à la fleur.

DES LÉGUMES AU BALCON.—On a appris que les Allemands engageaient les habitants des villes à remplacer les fleurs aux balcons par des légumes. La chose est plus pratique qu'on ne serait tenté de le croire. Une plante très populaire dans les quartiers pauvres des villes est la Capucine, cultivée en caisses devant les fenêtres; dans certaines rues de Londres on l'a remplacée par le Haricot à fleur ornementale qui est tout aussi décoratif et donne une petite récolte de légumes, appoint non à dédaigner dans un ménage ouvrier.

COMMERCE HORTICOLE NÉERLANDAIS.—La demande pour l'exportation est de nouveau très vive et les prix se tiennent à un niveau élevé. Les Oignons valent 12 à 13 francs les 100 kilos et s'écoulent très rapidement; les Haricots-princesses 20 à 35 francs. Les Choux sont amenés en abondance et se vendent facilement: les Choux-fleurs 20 à 35 fr., Choux rouges 10 à 25, Choux de Milan 12 à 18, Choux blancs 15 à 25. Les Tomates ont haussé et valent 50 à 55 francs les 100 kilos, prix exceptionnel pour l'époque. D'une façon générale, les fruits ne sont pas trop chers mais les cours sont à la hausse. Les Prunes se vendent très bien. Le Raisin est en pleine production; le marché local de Poeldijk en écoule jusqu'à 8,000 kilos par jour. Le Frankenthal vaut 0 fr. 80 à 1 fr., le Black Alicante 0 fr. 90 à 1 fr. 25, le Foster 0 fr. 50 à 0 fr. 80 le kilo. Le Gros Colman s'écoule avantageusement en Angleterre. La demande est moindre pour les Melons, mais reste régulière pour les Concombres qui sont moins abondants. Le temps plus frais a de nouveau raffermi les prix des fleurs coupées, en restreignant les apports et en facilitant les expéditions: les Roses valent 5 à 10 centimes pièce suivant qualité, certaines variétés plus recherchées atteignant 15 à 18 centimes.

KORT OVERZICHT VOOR DE VLAMINGEN.

HET komiteit belast met het verstrekken van inlichtingen nopens de vereischen van land- en tuinbouw in België is aangesteld. Het wordt voorgezeten door volksvertegenwoordiger Lefebvre van Mechelen. Belgische kweekers zullen daar ook inlichtingen kunnen bekomen.

Het gerucht is in omloop dat de Duitschen al de Witloofwortels in België opeischen mits 25 fr. per 1,000 kilos. Waarschijnlijk is dat ongegrond en is er enkel spraak der bitterpeccen. Er worden overigens nog al groenten weggehaald.

Veel gelei wordt gemaakt om als pleksel te dienen daar de boter zoo duur is.

In Londen vindt men vóór sommige vensters staakboonen aan koorden opgeleid die geen slecht versiersel uitmaken en tevens een zekere opbrengst boonen geven.

De hollandsche tuinbouwmarkt blijft goed. Men volgt er van nabij de maatregelen genomen om den uitvoer te beperken. De regering doet nu de opgeëischte boonen inzoeten. Later worden die ter beschikking der gemeentebesturen gesteld.

The Week's Work.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq.,
Castleford, Chepstow, Gloucestershire.

PLEIONE.—Such species as *P. Wallichii*, *P. maculata*, *P. praecox* and *P. lagenaria* have finished their season's growth, and the plants should be encouraged to ripen their pseudo-bulbs by exposing them to the light and gradually reducing the amount of water at the roots as the foliage begins to decay. The soil should be kept just moist, so as to help the new growth. Pleiones are active, more or less, throughout the year, and directly the leaves have fallen the blossoms will begin to appear. When in flower the plants may be moved to a drier atmosphere, where the blooms will last in full beauty for a long period.

CHYSIS.—By this time most plants of *Chysis* will be completing their pseudo-bulbs. Any that are backward should be placed either in the warmest house or at the hotter end of the *Cattleya* division. Plants that are still growing must be supplied with plenty of water and kept near the roof-glass. When the foliage begins to turn yellow the plant has reached maturity, and the supply of water must be regulated accordingly. Directly the pseudo-bulbs are fully developed remove the plants to their resting quarters and give only sufficient water to prevent the pseudo-bulbs from shrivelling.

VANDA COERULEA.—This *Vanda* is producing its flower-scapes, and should be exposed to the full sunlight, ample ventilation being allowed whenever the weather is favourable. Keep the roots supplied with water and the atmosphere fairly moist until the flowers begin to open. This *Vanda* requires slightly different treatment from that given to other members of the genus, and whenever possible a separate house or division should be set apart for its accommodation. *V. coerulea* needs a less humid atmosphere, and more ventilation and light, than other species. Under such conditions the flowers are at their best in point of colour, provided the houses are situated in the country and not near a large manufacturing town.

DECIDUOUS CALANTHES.—The species and hybrids belonging to this group (including *C. Veitchii* and *C. vestita*) are rapidly completing their pseudo-bulbs, and the flower-spikes will soon appear near the base. In most gardens *Calanthe* blooms are not required until the majority of the *Chrysanthemums* are finished, and where the spikes are likely to be early they can be slightly retarded by admitting a little more air and reducing the temperature a few degrees. When the plants begin to lose their leaves, reduce the water supply gradually, but not entirely until after the flowering period. The atmosphere may also be kept drier, but an occasional damping will be necessary to hold red spider in check.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton
Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buck-
inghamshire.

GATHERING FRUIT.—Early varieties of both Apples and Pears should be gathered before they are quite ripe and stored at once in a cool fruit room. It is much too early to begin gathering the later varieties of either Apples or Pears, but it is necessary to watch the different varieties as the fruits become fit for gathering, making an inspection of the trees at least twice a week. By this means the supply of ripening fruit, and especially Pears, will be lengthened. It is best to gather fruits for storing when they are perfectly dry; if plucked when damp they must become quite dry before being stored. Peaches and Nectarines should be examined daily and all fruits approaching maturity gathered. Wall Plums for dessert purposes should be examined every two or three days and

the riper ones gathered: the ripening may be finished in a dry, warm place, by which means the flavour will be much improved. Figs should be gathered as soon as they are ripe. These fruits require careful and constant watching, for they quickly deteriorate, either if gathered too soon or allowed to remain for too long on the trees. Figs should be eaten within two or three days after they are stored. Unless the fruit room is very spacious, the larger kinds of fruit may be stored in trays, provided the fruit room is well ventilated. Wooden fruit trays afford a quick and ready means of examining the fruit without disturbing the bulk. If the fruit is stored on shelves, cover the latter with a layer of clean and perfectly dry straw—of Wheat for preference: hay must not be used or the fruit will become tainted with the odour of the hay.

GREASE-BANDING.—The grease-banding of orchard and other trees must soon be done, in order to trap the wingless females of the winter moth. Get everything in readiness for the work to be commenced by the beginning of October. Various sticky substances for the purpose are obtainable from the horticultural sundriesman: it is important not to use one containing tar, for if tar gets on the bark the tree may be seriously injured. Where young trees are fastened to stakes the latter also should be grease-banded.

BUSH AND PYRAMID TREES.—As soon as the fruit on bush and pyramid trees has been gathered, thin the branches, especially those growing at right angles to each other. At this stage it can better be decided which branches should be removed than when the leaves have fallen. In most trees of this description more growths than are necessary are allowed to remain year after year, to the detriment of both tree and crop. The trees will suffer no more injury from being pruned before the leaves have fallen than after defoliation; indeed, the present is the more favourable time, as the wounds will heal before the winter.

STRAWBERRIES.—Many of the plants are still developing runners, which will injure the crowns if they remain. Remove them as they appear and give the plants every encouragement to mature their crowns thoroughly by keeping the surface of the beds stirred and destroying all weeds as they appear.

FRUITS UNDER GLASS.

By JOHN HIGGATE, Gardener to the Marquis of
LISLITHGOW, Hopetoun, South Queensferry, N.B.

Figs.—In the earliest houses the trees will now be shedding their foliage, and the ventilators should be kept fully opened night and day. Go over the trees each day and collect the fallen leaves, particularly those that may have become lodged among the shoots, as these might be the means of spreading insect pests. Examine the border, and if it should be found damp, withhold water from the roots for a time. Any fruits that have failed to mature should be rubbed off. In the later houses increase the ventilation. Remove all shoots not required to furnish the trellis. Trees that have borne good crops may still be fed with liquid manure until growth is quite completed. In the case of trees where the fruits are still ripening, a minimum temperature of 60° should be maintained, and except on very fine days it will be advisable to discontinue syringing. A genial atmosphere can be maintained at this season by an occasional damping of the borders and paths. Admit air freely, and when the weather permits the top ventilators may remain slightly open all night.

PEACH HOUSES.—Owing to the exceptionally dull summer, mid-season trees and those of the later varieties will probably be slow in ripening their growths. If this is the case, turn on a little fire-heat in the pipes, especially during the day, at the same time admitting air freely. Where the trees have become infested with red spider the foliage should be vigorously syringed early on each afternoon. The fruits of the latest varieties in a cool house should be exposed to the sunshine as much as possible. Draw aside any leaves that may be shading them, and at the same time

admit air freely by the top and bottom ventilators. After the fruits have been gathered, any surplus shoots that have been overlooked should be removed without further delay, and if red spider has been present, syringing the foliage with a solution of soft-soap and sulphur. If it is intended to replace worn-out trees, the necessary arrangements should now be made. It often happens that a number of young trees have been planted with a view to their taking the place of some of the older ones, in which case the work can be proceeded with at once. If this work is carried out before the foliage is shed, the newly-planted trees will become well rooted before they have to be started, and, if the trees are carefully treated, a very useful crop can be secured the following season. The opportunity should be taken to introduce into the border some good loam, to which has been added wood ash, lime rubble and a quantity of steamed bone-meal.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

NATURALISING BULBS.—The naturalising of bulbs in woodland glades, shady nooks, the wild garden, in grass or in any part of the pleasure grounds or park where the grass is not required to be cut before June or July, is a phase of gardening that cannot be too strongly recommended. Bulbs are cheap, and the labour of planting them and their subsequent need of attention are trifling. Various kinds in endless variety are suitable for one place or another and give a long succession of bloom, commencing with the Winter Aconites in February and continuing until May with Snowdrops, Crocus, Muscari, Scilla, Chionodoxa, Anemone, Erythronium, and Daffodils, finishing with May-flowering Tulips. Daffodils are the most popular of all, and are at home anywhere in sun or shade, though sunny positions are preferable for most, except perhaps those of the Leedsii type, the flowers of which are liable to fade in strong sunshine. Scilla campanulata in various colours is a good subject for the woodland and wild garden, and should be planted in bold drifts. Anemone nemorosa, Snowdrops, Tritelia, Winter Aconites and Erythronium (Dog's Tooth Violet) are all suitable for planting in short grass in the open or in partial shade, such as around trees, while the pretty Anemone apennina and A. blanda, the brilliant A. fulgens, and Muscari and Crocus in variety enjoy full sunshine. To make the most of the space at command, a successional scheme on the same ground is advisable; for instance, a grassy bank may be freely planted with Crocus for an early display, to be followed by Daffodils in early and late varieties, such as Golden Spur and Emperor or Empress, or Crocuses may be associated with the old double Daffodil and Narcissus Poeticus. A late display of bloom may also be had by planting the varieties Madame de Graaff and Grandis. In planting, the different varieties may be kept slightly apart, the objection to mixing them being the difficulty of keeping the varieties distinct and true to name when lifting. May-flowering Tulips may be planted in partial shade or sun, but unfortunately the bulbs cannot be relied upon to increase and improve yearly; perhaps the only places in which they are likely to succeed are where they are fairly dry during the winter. Success can sometimes be attained by growing them near Spruce and Yew hedges, the roots of which keep the soil dry. In planting bulbs of any kind for natural effects, form bold irregular groups, thinning off to narrower masses and even isolated bulbs. The turf is now in a suitable condition for planting, and the sooner the bulbs are inserted the better. Crocus corms only require to be just covered with soil, but all other subjects should be planted at least twice as deep as their own size. A bulb planter should be used where a large number of bulbs have to be planted.

LILIUM.—Many of the hardier Lilies are best planted now, or as soon as the bulbs are procurable. This is especially true of the early-flowering species, such as *L. elegans* and its

many forms, *L. umbellatum*, *L. croceum*, *L. Martagon*, *L. pyrenaicum*, *L. chalcidonicum*, *L. testaceum*, and *L. Hansonii*. They are all useful plants for the early herbaceous border, and contrast well with Delphiniums, Paeonies and Irises. They grow well in a deep, sandy loam. Plant the bulbs 4 inches to 6 inches deep, and surround each with a thick layer of sand. They should be planted on a small piece of peat; the roots will enter it quickly and keep free from excessive moisture at the beginning. All the varieties of the Tiger Lily are valuable for the late summer border, and may also be planted now.

HARDY FLOWER BORDER.—The flower-border is still gay with *Solidagos*, *Asteriums*, *Rudbeckias*, *Michaelmas Daisies*, *Dahlias*, and other subjects. The fine weather has been helpful to these plants, and with continued attention to such details as tying the shoots and removing faded blooms the borders will appear bright for several weeks to come. In an attempt to obtain neatness, however, do not cut plants of a shrubby nature too severely. All loose rubbish and weeds should be removed. Delphiniums, perennial Phloxes and Gaillardias may be increased from cuttings inserted now and rooted in a cold frame.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

PERPETUAL-FLOWERING CARNATIONS.—The more forward of the plants should be fed as soon as the roots have grown freely in the fresh compost. Let the plants have plenty of room and an abundance of fresh air. These Carnations are liable to become infested with aphids, red spider and rust; but light fumigations at short intervals, careful feeding, watering, and plenty of light and air, will ensure firm growth and healthy plants.

CLIMBING PLANTS.—Remove old and superfluous growth from such plants as *Stephanotis floribunda*, sponge the remaining growths and tie them evenly over the whole trellis. Thin and train climbing plants as they pass out of flower, so that all may be tidy for the winter. If superfluous shoots are removed, the remaining growths will be better matured. Wash the shading off the glass and cleanse it both inside and out.

GLORIOSA.—As the plants pass out of flower, gradually withhold water, so that the shoots may mature and ripen slowly. The temperature should not drop too much, as the bulbs require to be rested in a warm, dry position.

GENERAL REMARKS.—It will soon be necessary to shift plants from the pits and cold frames into the warm glasshouses. First make the houses ready; cleanse them thoroughly and remove blinds or other shading from the glass. The plants, whether Cyclamens, Primulas, Bouvardias, Solanums or Winter-flowering Pelargoniums, should be made tidy, and their pots washed before being taken indoors. Let them have an abundance of fresh air for some time to come. Watch the large-flowering Chrysanthemums carefully to see that early buds are in no danger of damping from excessive condensation of moisture. Do not house the main batch of these plants until it becomes necessary: they are generally safe out-of-doors until the middle of October, but provision must be made for them under glass before early frosts are experienced. All plants with tubers, such as Begonias, Gloxinias, Streptocarpuses, Gesneras and Caladiums, that have passed out of flower, should be dried off gradually and not neglected until they go to rest. Prepare such plants as Marguerites and Salvias for lifting and potting from the open garden by cutting around the roots with a spade a few days before shifting them. Lift the roots carefully with plenty of soil, reduce the ball to a suitable size for the pots, ram the soil firmly, and then soak it with water. Afterwards lightly syringe the plants two or three times daily until they are re-established. The plants may be placed in a cool house or allowed to remain out-of-doors in a shady situation until the weather turns very cold.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

POTATOS.—Many varieties of Potatos are ready for lifting, and the work should be done with as little delay as possible. If the weather is favourable the tubers may be allowed to remain exposed to the light for a few hours before they are removed to the store. Do not place them in large heaps until they have become quite dry and cool. Later they may be stored for the winter, all light being excluded. It is an advantage to sprinkle them with lime.

CARDOONS.—As the plants become large enough for blanching, draw the foliage together carefully with the hands, tie with some soft material, and then bind with clean haybands in order to exclude the light. Afterwards place soil around the plants in such a manner that rains will not reach the stems, for blanching stems are spoiled by wet.

CAULIFLOWERS.—A sowing of Cauliflower seeds should now be made to produce plants for wintering under glass. Sow the seeds thinly in a cold frame in not too rich soil. The frame should be raised to within 15 inches of the roof-glass and the lights removed as soon as the seedlings appear. When the young plants are large enough they may be transferred into 4-inch pots and placed on a bed of ashes in a cold pit, where protection from frost can be afforded by means of covering. The soil may consist of sandy loam, which should be made moderately firm about the roots. The pit should be kept closed for a few days after the plants are potted, but as soon as growth commences the lights must be removed and remain off until the weather becomes very wet or cold. This method of producing early Cauliflowers is a good one, as the results from autumn-raised plants are far better than from those raised in heat during the spring. It is a good plan to make two sowings for this purpose, the first about the middle of September and another ten days later. Good varieties for the purpose are *Magnum Bonum*, *Great Dane*, *Early London*, *Walcheren* and *Early Autumn Giant*.

MINT.—The earliest batch of Green Mint should be cut over now and the plants allowed to remain dormant for a few weeks. The roots may then be carefully lifted and placed on a gentle hotbed, which should have been made up some days previously. When the bed has become settled, spread a covering of sifted soil over the surface to a depth of six inches. On this the roots should be carefully laid and covered with one inch of the same material, care being taken that the heat does not become too strong or the roots will be injured. If all goes well the crop will be ready in a few weeks, and should continue to produce an abundance of Green Mint throughout the winter. A slightly-heated peat pit will answer the purpose.

TOMATOS.—The foliage of plants in the open should be carefully reduced in order to expose the fruits to the sun as much as possible. Top-dress the roots with artificial manure and water them with clear, soft water immediately afterwards. Plants in exposed positions should be protected from early frost, and as soon as the fruits have changed colour they may be gathered and placed on a warm shelf to mature.

LETTUCE.—Continue to plant out seedling Lettuces before they become drawn. A sheltered position should be selected and the plants carefully watered in order to settle the soil about their roots. Keep the soil between the plants stirred from the time when they begin to grow, and destroy all slugs as far as possible throughout the autumn.

TURNIPS.—Late-sown Turnips must be thinned as soon as they are large enough to a distance of 6 inches apart. If the autumn is favourable these late Turnips will prove useful in the spring, either as roots or for the supply of greens. Keep the hoe freely at work between the rows and dust the soil with soot and wood ashes.

WINTER SPINACH.—The plants should be carefully thinned and never allowed to become crowded. Hoe the soil frequently and dust it with soot.

HOEING.—Take advantage of dry days to hoe as much of the garden as possible in order to rid the ground of weeds before the season is far advanced. If this work is neglected now the garden is almost sure to present an untidy appearance later in the year, when it becomes more difficult to carry out such work.

THE "FRENCH" GARDEN.

By P. AQUATIAS.

CROPS UNDER GLASS.—Cucumbers in frames have not fruited well this season, except where special attention was afforded the plants. Instead of shading with whitewash, as is usual, we have spread mats on the glass only when needed. Frames that are not otherwise in use should be placed over the Beans sown in July. Keep the lights open day and night until early in October to facilitate the setting of the blooms. The leaves may be thinned to allow air and sunlight to reach the plants. Watering the roots with liquid manure will increase the yield considerably. Frames may also be set in a southern position for transplanting at the end of September winter Lettuces raised from seeds sown a few weeks ago. Dig the ground inside the frames, place six to eight barrow-loads of black soil in each as a top dressing, and close the lights. As soon as the plants are of a suitable size for transplanting they should be set at the rate of 90 per frame of the variety *Passion*, and 120 of *Little Gott*. Shade the lights if needed until the plants are well established, but later on ventilation should be afforded on all favourable occasions.

THE APIARY.

By CHLORIS.

REMOVING SURPLUS HONEY.—All supers should be removed from the hives. By allowing the sections to remain the cappings will be thickened and become travel-stained. Such sections never look so well as those with thinner and cleaner cappings. As the shallow frames are taken away do not delay extracting the honey longer than is absolutely necessary, as the honey becomes thicker as it cools; consequently, more is left in the combs. Should it be impossible to extract at once, keep the frames of honey in a very warm room or cupboard until the work can be done, as otherwise it will take several days to liquefy the honey sufficiently to perform the task economically. As the frames are emptied, return them to the hives for the honey still in them to be cleared out by the bees; at the same time reduce the width of the entrances to discourage robbing, remembering to put the frames to be cleaned on the hives in the evening. When the old frames are empty of honey wrap them in brown paper and store in a dry room. After straining the cappings melt them, taking care to use rain or distilled water and never allow the water to boil. Any badly-filled sections can be stored to be used as bait sections for next season.

PREPARATIONS FOR 1916.—The successful beekeepers of next year will, other things being equal, be those who are taking care to have plenty of stored food, and who see that every colony is sufficiently strong and is headed by a young and vigorous queen of this year. It is not uncommon for bees to survive the winter and reach February and March safely, or even April and May, and then die through a lack of food. Many expert beekeepers state that twenty pounds of stored honey or syrup will suffice for a stock of bees through the winter and spring, while others assert that it is better to aim at each hive having nearer thirty pounds of food, and with the latter I concur. The larger quantity is far safer, and places the beekeeper in a strong position. Where there is not a sufficiency of food stored in the brood chamber feeding must be resorted to at once and completed by the middle of October, especially as the weather is fine and favours manipulation. Syrup feeding is the correct thing in the autumn, and as Beetroot sugar is probably answerable for some of the bee diseases, only the best white lump Cane sugar should be used.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, Wellington Street, Covent Garden, W.C.
Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe this notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the **PUBLISHER**; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the **EDITORS**. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, SEPTEMBER 20—

Nat. Chrys. Soc. Executive and Floral Coms. meet.

WEDNESDAY, SEPTEMBER 22—

"Daily Mail" vegetable exhibition in R.H.S. Hall (3 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 55.7.

ACTUAL TEMPERATURES:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: *Thursday, September 16* (10 a.m.) Bar., 30.2. Temp., 71°. Weather—Dull and oppressive.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY—

Dutch Bulbs, by Protheroe & Morris, 67 and 68, Cheapside, E.C., at 10.30.

MONDAY AND WEDNESDAY—

Bulbs, Bay Trees, etc., at Stevens' Rooms, King Street, Covent Garden.

WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY—

Nursery Stock in variety at The Old Nurseries, Chesham, Hertfordshire, by order of Messrs. Paul & Son, Ltd., by Protheroe & Morris, at 12.

WEDNESDAY—

Trade Sale of Bulbs and Plants, by Protheroe & Morris, at 1.

The History of Kew Gardens.*

Every botanist and gardener with a taste for history should secure a copy of Professor Boulger's little pamphlet on the history of Kew Gardens. In it this great foundation is traced to the establishment, 500 years ago, by Henry V., of two religious houses—an atonement for the murder by his father of Richard II. These were the Bridgettine Nunnery of Syon and the Carthusian Priory of Sheen. Surely it must have been of these that Shakespeare, with a poet's licence, in the immortal lines beginning "O God of Battles! steel my soldiers' hearts. Possess them not with fear..." makes Henry V. exclaim: "And I have built two chantries, where the sad and solemn priests sing still for Richard's soul!"

The Old Deer Park was the seat of the Priory, and passed with the suppression of the monasteries in 1539 to Edward Seymour, Earl of Hereford, afterward Duke of Somerset and Lord Protector. In

1547 he exchanged his lands at Sheen for the estate of the Bridgettines at Syon.

William Turner, father of English Botany (1510?-1568), became, in Edward VI.'s reign, physician to Somerset, to whom he dedicated his *Names of Herbes*, dated from Syon, 1548. Thus did Botany early take root in what is now its home, and, indeed, Turner speaks of his own garden at Kew.

Professor Boulger suggests that "Kew" is the quay-hoe, or landing place, of the ferry from Brentford.

After the lapse of a century, Kew peeps again from the scant pages of the book of history. Sir Henry Capel, an ardent gardener and importer of new shrubs from the south of Europe, is now (in 1678, according to Evelyn) established at Kew—"it is an old timber house, but his garden has the choicest fruit of any plantation in England, and he is the most industrious and understanding in it"—the *genius loci* had possessed Sir Henry Capel.

Sir William Temple, whose love of gardens Macaulay celebrates, was a neighbour of Sir Henry's, and in his house Swift—Temple's secretary—may have written his *Tale of a Tub*.

The house that had been Sir Henry Capel's was leased in 1730 to Frederick Prince of Wales, and it was the widow of the Prince, the Princess Augusta of Saxe-Gotha, who, on the advice of Lord Bute—a keen botanist—decided to establish a botanic garden.

William Aiton, trained under Philip Miller in the Chelsea Physic Garden, was put in charge of the Princess's garden of nine acres. Therein Sir William Chambers, the architect of Somerset House, built the Orangery (now the Timber Museum), the Pagoda, most of the little Temples, and the Great Stove. Stephen Hales was brought into association with the garden, becoming, in 1751, almoner to the widowed Princess, and it was he who designed the flues of the Great Stove. His flues remained until the building was demolished in 1861. In 1761 Archibald Duke of Argyll, nicknamed by Horace Walpole the Tree Monger, bequeathed to the Princess of Wales trees from his garden at Whittington, and of them a fine Cedar, a Persimmon, a Robinia, and a Turkey Oak are still living. At Lord Bute's death Sir Joseph Banks became Royal adviser—practically unpaid Director—of Kew Gardens, and held this position until his death in 1820. To him was due the despatch of collectors to various parts of the world. Francis Masson was sent twice to South Africa, and he is said to have been responsible for the introduction of Pelargoniums, Heaths, and bulbous plants from that region. David Nelson another Kew collector, went with Captain Cook on his third voyage—1776-9—and brought back the first specimen of Eucalyptus. He was in the mutiny of the *Bounty*, and, cast adrift with Captain Bligh, made a journey of 3,600 miles, and reached Timor only to die.

Professor Boulger gives an interesting account of the publication of the *Hortus Kewensis* in 1789, and of the influence of Sir Joseph Banks in attracting men like

Robert Brown and the brothers Franz Andreas and Ferdinand Lucas Bauer, of whom the elder became official draughtsman at Kew in 1790, and the younger accompanied Flinders' expedition to Australia, to which expedition Robert Brown was attached as naturalist.

George III. and his Consort, Queen Charlotte, who was deeply attached to Botany, lived much in Kew, but in 1810 the King became insane, and the Government gave Kew but little support.

In 1820 Banks died, and the decline of Kew became even more marked until, in 1838, the Government proposed to convert Kew into a Royal fruit and vegetable garden. George Bentham and John Lindley put themselves at the head of a movement to prevent so scandalous a procedure. A Treasury Committee was appointed, and Lindley drew up a report, recommending that Kew should be made a National Garden. Lindley laid down the lines on which Kew should be directed, and his friend, W. J. Hooker, was appointed in 1841 Director of Kew. With Hooker's advent the greatness and permanence of Kew were assured.

SAXIFRAGA MANSHURIENSIS.—The Saxifrage illustrated in fig. 62 is a species new to gardens, having been recently introduced from North-Eastern Asia. The leaves—each 3 inches or more in diameter—are round in shape, fleshy in texture, and have long petioles, which are covered with stiff hairs. The tufted nature of the foliage is very similar to the arrangement of the leaves in *S. rotundifolia*. The flower stems are stout, 1 foot to 18 inches high, thickly beset with white hairs, and bear a rounded panicle of white flowers which have orange stamens. As the carpels are of a ruddy pink the whole inflorescence has a rosy appearance, and at first sight suggests a small and densely-flowered *S. peltata*. *S. manshuriensis* is a perennial and does not flower till the middle of July, the blooms lasting well into the month of September, thus connecting the early summer-flowering Saxifrages with the autumn-blooming *S. Fortunei*. The species is a woodland plant, flourishes in moist, shady places, and is easy to cultivate. Seeds were obtained at Kew Gardens from Messrs. Regel and Kesselring, of Petrograd, in 1913. From these plants were raised, and although one or two small specimens flowered last year, the majority did not bloom until July, 1915, when the plants attained their normal size.

NATIONAL CHRYSANTHEMUM SOCIETY.—The National Chrysanthemum Society has issued its programme for the coming autumn and winter. The annual exhibition will be held in the R.H.S. Hall, Westminster, on November 11 and 12. The first event of the season is a lecture on October 4 by Mr. C. HARMAN PAYNE; on November 3 Professor KEEBLE will lecture on plant breeding, with special reference to Chrysanthemums; and on December 8 Mr. P. A. CRAIG will deliver a paper on raising seedlings. The secretary is Mr. R. A. WITTY, 72, Savernake Road, Gospel Oak, N.W.

RETIREMENT OF MR. GEO. SUMMERS.—After a period of service covering thirty-eight years, Mr. GEORGE SUMMERS has relinquished his position as head gardener at Sandbeck Hall, Yorkshire. During the time he was in charge many improvements were made, and fruit and vegetables especially were grown on a large scale. Mr. SUMMERS is to be succeeded at Sandbeck Hall by Mr. HEALD, of Middlethorpe Manor Gardens.

* *The History of Kew Gardens: The Connection of Kew with the History of Botany.* By G. S. Boulger. Price 1d., post free, 11d. (Hiscoke & Son, Richmond, Surrey.)

DEATH FROM FALLING BOUGH.—A sad fatality took place in Kew Gardens a few days ago. A young man named HERBERT LITTLETON, aged twenty, of North Road, Kew, was sitting under an Elm tree (*Ulmus montana*) in Kew Gardens, near the Cumberland Gate, when a branch was broken off by a gust of wind and fell on his head. He was taken to Richmond Hospital, but his skull was found to be fractured, and he died soon after his admission.

CROYDON CHRYSANTHEMUM SHOW ABANDONED.—The committee of the Croydon Chrysanthemum Society has decided to abandon the idea of holding the annual exhibition for 1915.

TRIALS OF SWEET PEAS.—The National Sweet Pea Society will conduct a series of Sweet Pea trials in 1916. Those wishing to send novelties for trial are asked to enclose thirty seeds of each variety in a plain packet, enclosed in an outer packet bearing the name and address of sender, and the name, description and colour of the variety. A fee of 2s. 6d. must be enclosed with each packet of seed. The seeds must reach the Secretary, Mr. H. D. TIGWELL, Greenford, Middlesex, not later than October 1, 1915.

A POTATO COMPETITION.—The Staines Lino Horticultural Society instituted a Potato competition, and the results were announced at the society's annual exhibition, which was held on the 4th inst. on the Staines Lino Company's premises. Each competitor received 1lb. of seed tubers, and the winner, Mr. H. PEARTON, Pooley's Green, Egham, succeeded in securing 113lbs. from his eight or nine sets. The 2nd prize-winner obtained 94lbs., and the 3rd 78lbs. Mr. PEARTON sprouted his seed tubers in a box and divided them into portions with a favourable eye in each; he also detached cuttings and inserted them after the plants had started into growth, and by these means he was able to secure 37 sets.

WAR ITEM.—Three members of the garden staff at Welbeck Abbey—Sergeant W. JOHNSON, Corporal A. WILLIAMS, and Private F. FLETCHER—were killed in action at the Dardanelles on August 9. In all, twenty-four members of the garden staff at Welbeck have enlisted, being practically all who are eligible for service. Besides the garden staff, all the employees on the estate who are of suitable age have joined the forces. The Duke of PORTLAND has arranged that no employee shall suffer pecuniary loss through his patriotism, and has promised that every man shall have the opportunity of resuming his duties when the war is over.

EXCHANGE OF SEEDS.—Mr. M. BUYSMAN, the Curator of the Jardin Botanique, Lawang, Java, writes:—"I shall be extremely obliged to any reader of this paper who would exchange seeds with me, especially if they would send me seeds of plants not yet cultivated or very rare, from the Colonies and elsewhere. I can furnish in return very rare seeds from different parts of the world. I hope to return to Holland after the war, and seeds can then be sent me as 'samples'; but as long as I am in Java seeds cannot be sent me except by letter or parcel post, as they are not permitted to be sent by sample post." Mr. BUYSMAN's address is Jardin Botanique, Lawang, Java.

"JOURNAL OF THE BOTANICAL SOCIETY OF SOUTH AFRICA."—We have received the first number of a journal published by the Botanical Society of South Africa, containing an interesting sketch of the rise and development of the National Botanic Gardens at Kirstenbosch (see *Gard. Chron.*, August 30, 1913, p. 150). It is intended that the journal shall appear at regular intervals, to form a link to unite the membership of the society, as well as to bring the members as a whole into closer touch with the work of the Botanic Gardens. Widespread interest has already been created in the preservation, cultivation and study of the vegetation of South Africa, and the journal will per-

form a valuable function in recording work done and stimulating further efforts. This first number contains a full-page portrait of Baron DE VILLIERS, the late president of the Botanical Society, who was keenly interested in the preservation of the natural features of the country of his birth. He took an active part in the early stages of the work at Kirstenbosch, and his advice and encouragement were of the utmost value to those responsible for the undertaking. There is also an interesting account of the work already done in the gardens, and an annual report and other information relating to the Botanical Society. It is to be hoped that the promoters of the journal will be enabled to carry it on, as it will form a record of inestimable value. The

of its native country. No further information respecting this remarkable tree reached us until quite recently; but there is very little doubt that the *Dimorphandra megistosperma*, Pittier,* is the same thing, though, as he had not the specimens of both before him for comparison, he would not risk possible confusion. According to Mr. H. PITTIER *Dimorphandra megistosperma* is a tree from 50 to 150 feet high, growing gregariously in "mile-long stretches" of the tidal forests of the Province of Panama. The one-seeded pods are as much as 10 inches long by five broad, and the dimensions of the largest seed collected are given as 18cm. long with a breadth of 12cm., and a thickness of 8cm., which is about 7 inches by 5 by 3. As



[Photograph by W. Irving.]

FIG. 62.—*SAXIFRAGA MANSHURIENSIS*: FLOWERS WHITE, WITH ORANGE-COLOURED STAMENS, AND PINK CARPELS.
(See page 184.)

editor is Professor H. H. W. PEARSON, the hon. director of the Botanic Gardens.

THE ALCORNOQUE OF PANAMA.—Upwards of fifty years ago SUTTON-HAYES sent to Kew herbarium specimens of a Panama tree, and embryos of the same, preserved in spirit. The latter were placed in the museum and labelled as "probably the largest embryos in the vegetable kingdom." In HEMSLEY's *Botany of the Biologia Centrali-Americana* this tree is recorded under the name of *Dimorphandra oleifera*, Triana, but no description of it was published, though from the name given by Dr. J. TRIANA we may assume that he knew it in some part

the seed is exalbuminous, these are practically the dimensions of the embryo. Alcornoque is Spanish for Cork Oak.

FLOWERS IN WAR TIME.—At the opening of the Dumfries and District Flower Show on August 27, Sir JAMES CRICHTON-BROWNE, who presided, referred to the recommendation of the Parliamentary War Savings Committee regarding the cultivation of fewer flowers. Sir JAMES thought that the committee went rather too far in making this recommendation, and that it was not by robbing life of its beauty and refresh-

* *Journal of the Washington Academy of Sciences*, V., p. 472, 1915.

ment that its sinews would be strengthened. Superfluous asceticism was useless, and a ban on flowers would be excessive. Flowers were not altogether a luxury; they added to the sweetness and wholesomeness of existence. They were civilising and humanising, and made effective appeal to our refinement. Anyone who had visited the hospitals for the wounded soldiers must have realised how much the monotony and pain of their life had been relieved by the flowers with which the wards were decorated. Many a dying soldier had been soothed by sweet and tender memories of his country home, conjured up by the Roses or Pansies or Marigolds that kind hands had placed by his bedside.

MR. W. BAIN.—We regret to announce that Mr. W. BAIN, gardener at Burford, Dorking, has sustained a sad bereavement in the death of his wife, which occurred at Burford on the 3rd inst., after an illness lasting seven weeks.

BELGIAN AZALEA-GROWERS' TRADE WITH AMERICA.—The British Order in Council of March 15, 1915, has practically prevented the export to America of Belgian Azaleas, on account of the area (chiefly the environs of Ghent) in which these flowers are grown being at present occupied by the Germans. A movement has been set on foot among American horticulturists to get a different interpretation placed on the Order by the British Government. At present Belgian exports are only released when payment is made in London, Great Britain to forward the money to the Belgian shippers direct.

STOPPING VINES.—In the last issue (see p. 173), we published a letter from Mr. R. P. BROTHERTON, of Tynninghame Gardens, Preston-kirk, on the subject of stopping Vines. To show how well his method succeeds, and that it is not always necessary for the shoot on which the Grapes grow to extend beyond the bunch, Mr. BROTHERTON has sent a double bunch of Black Alicante Grapes, which fully bears out his contention. The berries were large, firm, and well coloured, the flavour also being quite as good as can be obtained in this particular variety. The deep black colour was remarkable in that it is Mr. BROTHERTON'S habit, contrary to that of some growers, to admit the maximum of light to black Grapes when colouring.

CLOVER SEED.—Experiments made at the Northumberland Agricultural Experiment Station, and at other centres in the North of England and Scotland, are proving the value of wild white Clover as a hay and pasture crop. Last season the seed sold at 8s. a pound, and even at that price the supply was not equal to the demand. Professor GILCHRIST, in a letter to the Press, urges farmers to save the seed of this Clover. Old pastures which have been dressed with basic slag or other phosphatic manures often develop profuse quantities of wild white Clover, and it is then possible to harvest a large amount of seed.

PUBLICATIONS RECEIVED.—*Bulletin du Jardin Imperial Botanique de Petrograde*. Tome XV., livraison 1, 1915.—*Commercial Carnation Culture*. By J. Harrison Dick. Illustrated. (New York: A. T. de la Mare Publishing Co., Ltd.)—Reprints from *Journal of Agricultural Research*, Department of Agriculture, Washington, D.C.:—(1) *A Nasturtium Wilt Caused by Bac'rium solanacearum*. By M. K. Bryan; (2) *Influence of Hybridisation and Cross-Pollination on the Water Requirement of Plants*. By L. J. Briggs and H. L. Shantz, Department of Agriculture, Washington.—*Journal of Heredity*. September, 1915. (Organ of the Genetic Association, Washington, D.C., for circulation among members.)—*Principles of Floriculture*. By Edward A. White. (New York: The Macmillan Co.) Price 7s. 6d. net.—*Journal of the Royal Horticultural Society*, Vol. XLI., Part I. August, 1915. Price to non-fellows, 5s.—*Methods in Plant Histology*. By Charles J. Chamberlain. (London: The Cambridge University Press, Agents for the University of Chicago Press.) Third revised edition.

HOME CORRESPONDENCE.

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

CONES ON ARAUCARIA IMBRICATA (see pp. 157, 173).—I have seen a tree of *Araucaria at Edridge, Sussex*, with cones and catkins on the same branch. An illustration of a branch showing this monoecious character is given in Veitch's *Manual of Coniferae*. Henry Henderson, Castle-comer, Co. Kilkenny.

—Sir Herbert Maxwell states that in his district the fertilisation of the cones of *Araucaria imbricata* takes place during their second year, but the same tree differs greatly in its behaviour in Cornwall. At Pencarrow Gardens, Bodmin, the female flowers make their first appearance towards the end of April, and by the end of June measure about 7½ inches in circumference. Fertilisation takes place early in July and development continues until about the middle of November, the cones then measuring 11½ inches in circumference. Growth recommences the following April, and the cones ripen in mid-August, when the seeds and scales fall to the ground. The catkins make their first appearance in autumn in clusters of four; they liberate their pollen the following summer, and soon afterwards the majority fall to the ground. A. C. Bartlett.

—It is not uncommon for *Araucaria imbricata* to develop cones in Scotland. Twenty odd years ago I saw a fine specimen at Duart House, Isle of Mull, bearing cones, and more recently, in 1912, I observed several trees at the Kilkerran Estate, Ayrshire, with fairly large numbers of cones. From the latter I collected more than one hundred perfect seeds, sowed them, and was successful in raising about sixty young trees. As the *Araucaria* is not a tempting tree to climb I had to wait until the late autumn for the cones to fall before the seeds could be secured, and I believe many were lost, but as near as I could estimate not more than four plump seeds were ever collected from where one cone had fallen, although the ground was littered with the scales and imperfect seeds. Can anyone inform me why this *Araucaria* dies off suddenly, without any apparent injury or disease, in Oxfordshire? I saw a specimen the other day, perhaps twenty years old, quite brown, and a close inspection revealed no trace of injury, but the tree was dead. A. T. H.

—We have two large specimens of *Araucaria imbricata*, each carrying twenty or more cones. The exact age of the trees I am unable to state, but they have been in their present position upwards of fifty years, and both produce cones regularly of a size, when mature, about equal to that stated by your correspondent. Not only do they produce cones but they also ripen seeds, and I have a young tree about 4 feet in height raised from a seed picked up in 1906. I also have a seedling in a 6-inch pot which I lifted from under one of the old trees last autumn, where apparently the seed had fallen and germinated. This particular tree is not a good specimen, as it has lost its branches for some considerable distance up the stem. Its girth is 7 feet at 1 foot from the ground and 6 feet at 5 feet from the ground. A. Herbert, Leigh Park Gardens, Havant, Hampshire.

LARGE PEACHES (see p. 173).—I have gathered excellent fruits of Peach Peregrine from a tree growing on a south wall in these gardens. The weight of one fruit was 10½ ounces. C. Ruse, Folly Farm Gardens, Sudhamstead, Reading.

CUCUMBER EVERY DAY.—In reply to Mr. R. Jones (see p. 133), I fear he has misconstrued my remarks (see p. 115) relative to Cucumbers. I was simply asking for more information respecting Cucumber Every Day (a variety with which I have no experience), remarking that for utility I had never found a variety to beat Telegraph. I have grown varieties which produce larger fruits, such as Tender and True and Duke of Edinburgh, but have never found them to be good for general cropping. However, Every Day shall have my attention in the immediate future. Philip Bolt, junr., The Gardens, Stand Hall, Manchester.

STEPHEN SWITZER.

THE passage of time provides a perspective in which the angularities of manner are rounded off, asperities of temper smoothed over, and unplesing proclivities obscured. And so it comes to pass that the Switzer we know is another individual than he who was frequently at feud with his contemporaries. Possibly he was to blame; probably they were not faultless. Anyhow, he seems to have belonged to that section of the community whose chief characteristic is to find difficulty in getting on with neighbours. In a word, he was often in hot water. There are several sources from which it is possible to piece together outstanding periods of his life. An anonymous contributor to *The Cottage Gardener* has given an account of his birthplace and baptismal register, from which it appears he was born in the village of Stratton, in Wiltshire or Hampshire, where his father was a builder, in February, 1692. His death is recorded in *The Gentleman's Magazine* for 1745, under June 8. "Mr. Stephen Switzer, seedsman in Westminster Hall, well known for his treatises on agriculture and husbandry." He was thus 62 years of age when he died, and not 80, as has been recorded. Our first introduction finds him a foreman of London and Wise, under whom he helped to lay out the extensive gardens and grounds at Blenheim, for the Duke of Marlborough. Subsequently he engaged in landscape operations in Lincolnshire, Durham, Rutland and Derbyshire, and if we are to credit J. C. Loudon, while he stayed in Edinburgh in 1717 Switzer published a book on training, of which, strangely enough, no trace can now be found. Johnson is the authority for Switzer's having visited France in 1715, but here again the means of verifying what assuredly would have been according to Switzer's desire is unavailable. It is uncertain but not improbable that he designed and laid out gardens previous to 1715, in which year his first venture in literature, *The Nobleman, Gentleman, and Gardener's Recreation*, was published. Some of the principal gardens in England are all too briefly noted in this book. It was republished three years later as Volume I. of *Ichnographia Rustica*, the second volume of which contains numerous illustrations of formal garden designs, and the inevitable arithmetical problems which are to be found in all landscape books of the period. The third volume contains designs of *fermes ornées*, gardens and woods, with accompanying essays on subjects cognate to horticulture. This work was reissued in 1742, with a separate treatise appended, having its own title and price, but it does not appear ever to have been published previously or separately. As a landscape gardener, Switzer claimed to be the primal and immediate follower of Addison and of Pope, the first exponent of their teaching. He wanted to turn the whole estate into a garden, or at least to treat it so that everywhere one should light on spots of interest which were linked together by walks and drives, every one of which should be remarkable for the sinuosity of its lines. He could not have long continued in that capacity, because in 1724 he was gardener at Marston, near Frome, and it is reported had previously been employed in the Royal Gardens at St. James's. In that year his most important or at least his most practical book on gardening was published, namely *The Practical Fruit Gardener*, which was far in advance of any other treatise on the subject that had yet appeared. It is in this book that the notice of the first vinery erected in England is contained. At Belvoir sloping walls had been erected for forcing Vines, and heat adapted to the circumstances introduced. Switzer suggested the placing of glazed frames in front of the walls, which was

dene forthwith. A second and improved edition appeared in 1731. In 1728 he had established himself as a seedsman in Westminster Hall, at the Sign of the Flower Pot, and at the entrance to the Court of Common Pleas, and also had a garden or nursery at Vauxhall. At this stage he incurred the ill will of the nursery trade of London, who regarded him as an interloper, because, as he states, he was "bred a gardener," and he quaintly remarked that "'tis much easier for a Gardener to make a Seedsman than for a Seedsman to make a Gardener." In the previous year Switzer had produced *The Practical Kitchen Gardener*, "being chiefly the observations of a Person train'd up in the Neat Houses or Kitchen Gardens of London," or, in other words, in market gardens. And the title concludes with the remark, "The whole methodized and improved by Stephen Switzer." At this period the Melon was the chief fruit in English gardens. After starting business he issued a pamphlet as an appendix to this volume. It is entitled a *Compendious Method of Raising Italian Broccoli, etc.* This and *A Dissertation on*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 14.—The National Dahlia Society's annual show was held in conjunction with the fortnightly meeting in the Vincent Square Hall on Tuesday last, so that Dahlias formed the chief attractions of the exhibition. About half the space was occupied by the Dahlia Show, and in addition there were large groups of these flowers from traders. A joint committee of the two societies considered the Dahlia novelties submitted for awards, and fourteen varieties received the R.H.S. Award of Merit and the National Dahlia Society's Certificate.

The Floral Committee granted Awards of Merit to a variety of *Polypodium Dryopteris* and a variety of *Ceanothus*, and awarded fifteen medals for collections.

The Orchid Committee recommended one First-class Certificate and two Awards of Merit to novelties, and awarded four Medals for groups.

The Fruit and Vegetable Committee again found much material for consideration. As at the

Turner, W. Cuthbertson, J. T. Bennett-Poë, W. G. Baker, E. A. Bowles, R. C. Notcutt, Geo. Harrow, E. H. Jenkins and R. W. Wallace.

AWARDS OF MERIT.

Polypodium Dryopteris plumosum (see fig. 63).—A plumose variety of our native *Polypodium Dryopteris*, discovered wild on Whitbarrow Scar, Westmorland. The fronds are much broader than in the type and the pinnules also are wider, with a disposition to overlap, causing the plumose appearance. The colour is pale, soft green, of the shade known as "moonlight" green. Exhibited by Mr. T. G. H. ELEY, Burgess Hill, Sussex.

Ceanothus Fantaisie.—This variety of *Ceanothus* has a large, dense head of flowers, the general tone being rosy-mauve, the stalks contributing a rosy shade, with flowers of paler hue. Shown by ELIZABETH LADY LAWRENCE, Burford, Dorking (gr. Mr. W. Bain).

The following varieties of Dahlias were awarded the R.H.S. Award of Merit and the National Dahlia Society's Certificate:—

A. R. Perry.—A large exhibition Cactus variety, with very incurving florets, coloured old-rose and tipped with gold, with a golden sheen at the base.

Gossamer.—A beautiful flower of the Cactus type of a clear, deep yellow colour.

Crescent.—This variety also belongs to the Cactus type, the very elegant flowers being white tipped with a suffusion of pink and having a faint golden colour at the base. These three varieties were shown by Messrs. JAS. STREDWICK AND SON.

Sapho.—This beautiful variety is a great acquisition. It belongs to the Single Decorative type, and has medium-sized blooms of a soft terra-cotta shade flushed with pale rose. The unopened buds are rosy-pink. The blooms rise well above the foliage on long, stiff stems.

Tipperary.—Of the same type as the last, the colour being brilliant crimson tipped with white.

Don Juan.—A scarlet Collerette variety, with white and scarlet collar. These three varieties were exhibited by Mr. R. CORY (gr. Mr. A. J. Cobb).

Blaze.—A large bloom of the Decorative type like a big Cactus Dahlia. The colour is brick-red. Shown by Messrs. JAMES CARTER AND CO.

W. Pound.—A Pompon variety, of neat, regular form, and coloured primrose yellow. Shown by Mr. S. H. COOPER.

Esmeé.—A Cactus variety of sulphur-yellow colour.

Coyne's.—A pale pink Cactus variety, with whitish centre.

Constance.—A large bloom of the Cactus type, coloured rose-pink.

Curlew.—This also is a rose-pink Cactus variety, but deeper in tone than the last, and with more incurving florets.

Cresset.—A Collerette variety of claret colour with a slight variegation of white at the edges. The purple and white collar is very pleasing.

Vanesse.—A refined white Pompon variety, regular in shape and small in size. All these shown by Messrs. J. BURRELL AND CO.

GROUPS.

The following Medals were awarded for collections:—

Silver-gilt Banksian Medals to REGINALD CORY, Esq., Duffryn (gr. Mr. A. J. Cobb), for Dahlias. The feature of this imposing collection was a bold epergne of the purple Jackmannii and white Lucetta, varieties of the single decorative type. Very beautiful also were the varieties The Cornelian, purple flush on an orange and gold coloured ground, Claribel, and Oran. Messrs. DOBBIE AND CO., Edinburgh, for Dahlias, mostly of the Collerette type. The group claimed attention for its delightful arrangement, the quality of the blooms and the wide range of colours. Notable varieties were Ouse, Hope, Pathfinder, Queen Bess, Inchcape, Tuskar, Doon, Maidens, Cloch, Scarlet Queen and Sunburgh.

Silver Flora Medals to Mr. J. B. RIDING, Chingford, for Dahlias; Mr. J. T. WEST, Brentwood, for Dahlias; Mr. W. WELLS, Jun., Merstham, for Delphiniums; and Messrs. PAUL AND SON, Waltham Cross, for Roses.



FIG. 63.—FROND OF POLYPODIUM DRYOPTERIS PLUMOSUM.

(See Awards by Floral Committee.)

the true *Cythisus* of the Ancients, published in 1731, exhibits Switzer in the character of the business man who saw the benefits of advertising, for both pamphlets strike one as being primarily produced to let the gardening and farming world know that Stephen Switzer was able to supply them with their respective necessities. While employed by Lord Orrery at Marston, Switzer was permitted the use of the library, and had made notes from which he compiled a two-volume work on Hydrostatics and Hydraulics, which was published in 1729. In 1731 he edited a monthly periodical, which ran for two years and was sold by the title of *The Country Gentleman's Companion, etc.* In this Jethro Tull was attacked for his novel ideas, and was characterised as an "infidel," a "tool," an ass, an owl, and other epithets similarly opprobrious. From this time he sinks into obscurity, the only signs of his continued existence being quaint accounts for seeds, etc., which have been found from time to time in the drawers of country houses. R. P. Brotherston.

last meeting, Messrs. LAXTON BROS. showed many new varieties of fruits, including Apples, Pears and Plums. Several of the Plums possessed much merit, but no award was made to a variety, owing to the regulation respecting an inspection of the trees to pass a test for cropping and habit of growth. With trees still growing in the seed-beds these points are not easily determined. Other exhibitors submitted novelties for awards, and a variety of Strawberry received the Award of Merit.

One of the groups comprised the most important exhibit in the show—a collection of pot trees and gathered fruits, for which a Gold Medal was awarded.

At the three o'clock meeting in the Lecture Room an address on "The Dahlia" was delivered by Mr. J. B. RIDING, secretary of the National Dahlia Society.

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. C. T. Druery, Chas. E. Shea, Chas. E. Pearson, Geo. Paul, G. Reuthe, C. R. Fielder, J. F. McLeod, W. Howe, J. W. Moorman, H. J. Jones, W. Bain, J. Dickson, C. Dixon, A.

Bronze Flora Medals to Messrs. CARTER PAGE AND Co., London Wall, for Dahlias; and Messrs. W. CUTBUSH AND SON, Highgate, for hardy flowers.

Silver Banksian Medals to Messrs. ALLWOOD Bros., Wivelsfield, for Carnations of the Perpetual-flowering type. Novelties included: Niobe, salmon-pink; Highland Lassie, a picotee variety, with white ground edged with red; and Rosalind, a yellow ground fancy with red markings. Messrs. H. J. JONES, LTD., Hither Green, Lewisham, for Michaelmas Daisies and border Phloxes; Mr. L. R. RUSSELL, Richmond, for sprays of ornamental trees and shrubs; Messrs. H. B. MAY AND SONS, Edmonton, for masses of fine Bouvardias in a setting of choice Ferns; Mr. G. REUTHE, Keston, Kent, for hardy flowers and Alpines; Messrs. J. S. WARE, LTD., Feltham, for Dahlias; and Messrs. DOBBIE AND Co., Edinburgh, for Sweet Peas and Gladioli, some of the spikes of the latter having fourteen expanded blooms.

Orchid Committee.

Present: Mr. J. Gurney Fowler (in the chair), Mr. Jas. O'Brien (hon. secretary), Sir Jeremiah Colman, Bart., Sir Harry J. Veitch, Messrs. Gurney Wilson, W. Bolton, J. Wilson Potter, Stuart Low, F. Sander, F. J. Hanbury, T. Armstrong, W. Cobb, J. Charlesworth, W. H. Hatcher, W. P. Bound, A. Dye, W. H. White, S. W. Flory and R. A. Rolfe.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Venus var. Princess Mary (Iris × Dowiana aurea).—A superb hybrid and the best of the class, which includes C. Iris, C. Adula and C. Rhoda. The flowers are large, of fine form, yellow in colour, with a bronzy tint, and veining on the petals. The short side lobes of the lip, clipping the thick white column, are rose veined with white, the broad front lobe being ruby-crimson. Shown by Messrs. CHARLES WORTH AND Co., Haywards Heath.

AWARDS OF MERIT.

Dendrobium Hookerianum Fowler's variety.—The remarkable variety described in the *Gardeners' Chronicle*, September 19, 1914, p. 200, with other varieties of D. Hookerianum. Generally, the plant is a difficult subject to cultivate, but it thrives remarkably well at Brackenhurst. The plant bears pendulous racemes of bright yellow flowers with dark blotches on each side of the lip, the distinguishing feature being that the petals, as well as the lip, are fringed as in D. Harveyanum. A plant of the typical form was also exhibited. Shown by J. GURNEY FOWLER, Esq., Brackenhurst, Pembury (gr. Mr. J. Davis).

Cattleya amabilis Fowler's variety (labiata × Warscewiczii).—From J. GURNEY FOWLER, Esq. A grand flower, in size and breadth of petal superior to either parent. The sepals and petals are coloured deep rose; the lip is broad, well rounded, and reddish-purple in colour.

SEEDLING COMMENDATION.

Cattleya Ashtoniae alba (O'Brieniana alba × Düsseldorfei Undine).—Messrs. ARMSTRONG AND BROWN, Orchidhurst, Tunbridge Wells. A small plant with a large white flower of perfect shape. It is the first that has received this award, which was instituted for seedlings that have not developed their characteristics sufficiently to merit other awards.

GENERAL EXHIBITS.

Messrs. ARMSTRONG AND BROWN showed the singular little *Odontoglossum Naevross (Naevium × Rossi)*; *Brasso-Cattleya Admiral Jellicoe var. delicata*, a finely shaped blush-white flower with a yellow disc and purple front to the lip; *Brasso-Cattleya The Czar (C. Fabia × B.-C. Digbyano-Mossiae)*, a beautiful rosy-lilac flower, with a large fringed lip; *Cattleya Kienastiana* Orchidhurst variety, a white flower with a crimped rose lip; and the new *Cymbidium Sandhurstiense (Wiganianum × erythrostylum)*, pale yellow with dotted lines of claret-colour.

Messrs. CHARLESWORTH AND Co., Haywards Heath, were awarded a Silver Banksian Medal for a group of finely grown Orchids which included a charming yellow and crimson form of

Cattleya Rhoda var. Czarina, of a new type; *C. Chamberlainiana* varieties, *C. Farina*, *C. Adula*, of a fine rose-tinted type; *Laelio-Cattleya Colmaniana*, and other hybrids.

Messrs. STUART LOW AND Co., Jarvisbrook, Sussex, were awarded a Silver Flora Medal for a group at the back of which were *Oncidium incurvum*, with nine spikes of its elegant rose and white flowers; the yellow *O. varicosum* and *O. oblongatum*, and, in the body of the group, *Vanda coerulea*, *Cymbidium erythrostylum*, various *Dendrobiums*, and hybrid Orchids.

Messrs. J. AND A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for an effective group which contained several pretty novelties, among which were noted *Cattleya Katie (fulvescens × Dowiana aurea)*, a pretty cream-yellow flower, with rose markings on the lip, which has a yellow ground; *Odontocidium Juno (Odm. ramosissimum × Oncidium tigrinum)*, which adheres closely to *O. ramosissimum* in the whitish colour with purple markings, and also in form; good forms of *Cattleya Gladys*, *C. Iris*, and other hybrids.

Messrs. SANDER AND SONS, St. Albans, were awarded a Silver Banksian Medal for a group of hybrid *Cattleyas*, *Laelio-Cattleyas*, and interesting species, including the remarkable *Bulbophyllum grandiflorum* and *B. bisetum*. At the back of the group were varieties of *Odontonia* St. Alban and *O. McNabiana*.

Messrs. FLORY AND BLACK, Slough, showed *Brasso-Cattleya Queen Alexandra* Langley variety, the finest large white *Brasso-Cattleya* yet shown; a remarkably pretty form of *Cattleya Hardyana*, good *Cattleya Kienastiana* and *Cynoches Peruviana*.

R. G. THWAITES, Esq., Chessington, Streatham (gr. Mr. Hannington), showed two good examples of *Cattleya Warscewiczii* Frau M. Beyrodt, and a fine specimen of *C. O'Brieniana* alba.

Fruit and Vegetable Committee.

Present: Mr. Jos. Cheal (in the chair), Messrs. W. J. Jefferies, T. W. Bates, J. Willard, A. R. Allan, H. Wright, A. Bullock, J. Udale, J. Jaques, E. A. Bunyard, P. C. M. Veitch, W. Poupart, Owen Thomas, John Harrison, Geo. Kelf, James Vert, F. G. Treseder and James Gibson.

AWARD OF MERIT.

Strawberry St. Fiacre.—A large variety, often of cockscomb shape, coloured bright red, with firm, pleasantly-flavoured flesh. The growth is of compact habit and hardy; the foliage is dark green and leathery. One of the best late Strawberries, being in season from the end of August to October. Shown by Messrs. GEO. BUNYARD AND Co., LTD.

OTHER NOVELTIES.

Mr. W. TAYLOR, Hampton, showed fruiting sprays of the Himalayan Blackberry which received a First-class Certificate at the last meeting. The exhibit was interesting as showing the ripe fruits, which are unusually large and a deep, glossy black. Messrs. LAXTON Bros., Bedford, again showed seedling fruits. The more interesting were Plums Bedford Prolific, an attractive, dull-red coloured variety of round shape, rather larger than Orleans, and somewhat like Cox's Emperor. The flavour is excellent and the tree is said to be a prolific cropper: Delight (Kirkes × Victoria), in shape like a small fruit of Victoria, but with dull purple, russet skin. The flavour is first-rate quality; it is a variety of much promise; Pond's Seedling × Czar, a big black fruit after the type of Black Diamond; Bullace Gage, raised from Reine Claude de Bayay crossed with Bullace; and a prolific fruiting Plum named Monarch Damson. This firm also showed an attractive new Apple raised from Cox's Orange Pippin × Lady Sudeley. The skin is streaked with red as in Lady Sudeley; in shape it resembles the first-named parent, but some of the fruits had a conical apex.

GROUPS.

The following Medals were awarded for groups:—

Gold Medal to Mr. J. C. ALLCROVE, Langley, for pot fruit trees and baskets of choice Pears,

Apples and Plums. The trees were principally pyramids not more than 3 feet 6 inches high, and they were all fruiting magnificently. In addition, there were cordon, espalier and standard trees all of the same splendid quality. The most remarkable were half-a-dozen maiden trees of the Rev. W. Wilks variety, each with a couple of fruits, each pair aggregating close on two pounds in weight. An espalier tree of Pear Princess was carrying about fifty fruits, each of exhibition quality, whilst a pyramid tree of Pear Marguerite Marillat was weighed down with fruit in bunches. At the back were standard trees of John Downie Crab and a splendid specimen of *Amygdalus purpureus*, the leaves as well as the fruits being purple. In baskets along the front were picked specimens of White Magnum Bonum, Grand Duke, Jeffersons, Kirke's, Pond's Seedling and other Plums; Triomphe de Vienne, Dr. Jules Guyot, Mrs. Seden and other Pears; and Apples, including James Grieve and Chas. Ross. *Silver-gilt Knight Medal* to the Marquis of Ripon, Coombe Court, Kingston Hill (gr. Mr. Thos. Smith), for a collection of Apples and Pears. *Silver Knight Medal* to Messrs. S. SPOONER AND SONS, Hounslow, for a collection of hardy fruits, and a *Silver Banksian Medal* to Messrs. GEO. BUNYARD AND Co., LTD., Maidstone, for Filberts, Cobnuts, Bullaces and Damsons. This interesting exhibit included the Black Bullace, Shepherd's Bullace; Frogmore Prolific, Merry-weather and Prune Damsons; Kent White Filbert, Prolific Filbert (a small early variety), Kent Cob, the Purple Nut, and Géant de Halles, like a glorified wood nut.

ROYAL CALEDONIAN HORTICULTURAL.

SEPTEMBER 8 AND 9.—The autumn show of this society was held in the Waverley Market, Edinburgh, on these dates. It will be remembered that following the outbreak of hostilities last year's show was abandoned; a comparison can only be made therefore with the exhibition of 1913, and, as was to be expected, owing to the shortage of labour and other circumstances connected with the war, there was a very considerable drop from that year in the number of entries. On this occasion, however, nurserymen contributed largely, but the receipts were little more than half those of 1913. The quality of the competitive exhibits was excellent, and in some of the fruit classes, notably for Grapes and fruit grown under glass, the entries were very full, and competition was keen. The show was opened on the first day by Lady Beatty, wife of Admiral Beatty, and on the second day by Miss Balfour, of Whittingehame, sister of the First Lord of the Admiralty, by both of whom an appeal was made on behalf of the War Horticultural Relief Fund.

GARDENERS AND AMATEURS.

FRUIT.

The president, the Right Honourable Lord Elphinstone, offered prizes in a class for a collection of 12 dishes of fruit, not more than two dishes each of Grapes (one bunch to a dish), Peaches, Nectarines, Apples and Pears, and one dish of any other kind of fruit. There were seven competitors, and the 1st prize was awarded to the Right Hon. A. J. BALFOUR, M.P., Whittingehame, East Lothian (gr. Mr. G. Anderson). This exhibit consisted of Grapes Muscat of Alexandria and Appley Towers; Peaches Bellegarde and Stirling Castle; Nectarines Lord Napier and Humboldt; Apples Emperor Alexander and Peasgood's Nonesuch; Pears Souvenir du Congrès and Beurré Mortillet; Fig Brown Turkey; and Melon Royal Sovereign. The exhibit received 68½ points out of a possible 95. The Right Hon. Lord ELPHINSTONE, Carberry Tower, Musselburgh (gr. Mr. D. Kidd), was placed 2nd with 66 points, and J. GRAEME THOMSON, Esq., Norwood, Alloa (gr. Mr. J. Small), 3rd, with 58 points.

The leading prize for Grapes, the "Thomson" Challenge Trophy, valued fifty guineas, presented by Messrs. Wm. Thomson and Sons, Ltd., Tweed Vineyards, Clovenfords (to be won three times), with £6 and a Gold Badge, was offered in the class for 6 bunches, in not

fewer than 3 varieties, and not more than 2 bunches of any variety. There were five entrants. The Right Hon. Sir HERBERT MAXWELL, Bt., of Monreith, Wigtownshire (gr. Mr. S. Gordon), proved successful with the following varieties:—

	Maximum No. of Points.	Points Awarded.
Muscat of Alexandria ...	10	8
Muscat of Alexandria ...	10	8
Black Hamburg ...	9	8½
Black Hamburg ...	9	8½
Alnwick Seedling ...	8	7½
Alnwick Seedling ...	8	7½
	54	48

CHARLES WM. FORBES, Esq., of Callendar, Falkirk (gr. Mr. J. Middleton), was placed 2nd, with 43 points out of a possible 52, and W. MACKAY, Esq., Ascog, Bute (gr. Mr. D. Halliday), 3rd, with 38½ points out of a possible 54. For 4 bunches of Grapes, distinct, the Marquis of TWEEDDALE, Yester, Haddington (gr. Mr. W. Hunter), was placed 1st with Muscat of Alexandria, Black Hamburg, Madresfield Court and Gros Maroc; 2nd, the Right Hon. A. J. BALFOUR, 3rd, the Right Hon. Lord BALFOUR OF BURLEIGH, K.T., Kennet, Alloa (gr. Mr. J. J. Wann). In the two classes for 2 bunches of Grapes the Right Hon. A. J. BALFOUR excelled for the variety Muscat of Alexandria, and Sir HERBERT MAXWELL for Black Hamburg. In the single bunch classes Sir HERBERT MAXWELL showed the best bunches of Muscat of Alexandria, Black Hamburg and Alnwick Seedling; W. MACKAY, Esq., the best Black Alicante and any other black variety (Mrs. Pince); Lieut. CLAUDE A. HAMILTON, Dunmore Park, Larbert (gr. Mr. J. Wood), the best Gros Colman; Lord ELPHINSTONE, the best Lady Downes; J. GRAEME THOMSON, Esq., the best Apple Towers and any other white Grape (Duke of Buccleuch); Lady CHARLES MERCER NAIRNE, Meiklour, Perthshire (gr. Mr. J. Chisholm), excelled for Madresfield Court; and C. W. FORBES, Esq., for any Grape introduced since 1900, with Directeur Tisseraud. The prize for berries with the finest bloom was awarded to Mrs. N. HAMILTON OGILVY, Winton Castle, East Lothian (gr. Mr. J. M'Fadyen), for a bunch of Apple Towers.

In the single dish classes the leading prize-winners were:—1 green or white fleshed Melon, Mrs. HAMILTON OGILVY (with Countess of Latham); 1 scarlet-fleshed Melon, Sir JOHN A. DEWAR, Dupplin Castle, Perth (gr. Mr. W. F. Game) (with Superlative); 12 Figs, Sir HERBERT MAXWELL, Bt. (with Castle Kennedy); 6 Peaches, C. W. FORBES, Esq. (with Grosse Mignonne); 6 Nectarines, Lord ELPHINSTONE (with Spencer); 12 Apricots, Lieut. CLAUDE A. HAMILTON (with Moor Park); 12 Gage Plums, Sir FRANCIS LLOYD, K.C.B., C.V.O., D.S.O., Aston, Oswestry (gr. Mr. W. Y. Staward) (with Oullin's Golden); 12 Yellow Plums, Sir HERBERT MAXWELL (with Jefferson); 12 Red Plums, Captain GORDON, Threave House, Castle Douglas (gr. Mr. H. Duff) (with Pond's Seedling); 12 Purple Plums, Captain GORDON, Threave House, Castle Douglas (with Kirke's). For a collection of Plums, Mr. R. STAWARD, Panshanger Gardens, Hertfordshire, excelled for 4 dessert varieties (9 of each), with Kirke's, Count Althann's Gage, Jefferson and Bryanston Gage; and Sir HERBERT MAXWELL for 4 culinary varieties with Goliath, Victoria, Diamond and Pond's Seedling. The entries for the collections of Apples, and also for some of the single-dish classes, were meagre compared with some former exhibitions, and there were no entries for the 18-dish and 12-dish collections. Sir ROBERT USHER, Bt., of Norton, Midlothian (gr. Mr. G. M'Kinn), was the only exhibitor of a collection of six varieties, and he was awarded the 2nd prize. The Right Hon. A. J. BALFOUR excelled for 4 dishes of pot-grown or orchard house Apples, and Captain GORDON for a collection of 12 varieties (5 fruits of each), grown in Scotland out-of-doors, the only other exhibitor being Mr. W. CORMACK, Amisfield, Haddington, who was awarded the 2nd prize. In the single-dish classes for Apples (6 fruits to a dish), Captain GORDON excelled for the varieties Newton Wonder, Gascoyne's Scarlet, Worcester Pearmain, Bismarck, Cellini, Duchess

of Oldenburg, Ecklinville, Emperor Alexander, Grenadier, Lane's Prince Albert, Lord Derby, Peasgood's Nonesuch, and Pott's Seedling; Sir HERBERT MAXWELL for Irish Peach; Lady C. M. NAIRNE for James Grieve, Lady Sudeley, Lord Grosvenor, Lord Suffield, Stirling Castle and Warner's King; Mr. W. WILLIAMSON, Edinburgh, for Baile Neilson; Miss HAMILTON, Rozelle, Ayr (gr. Mr. A. Harvey), for Golden Spire and for any other culinary Apple; Lady SINCLAIR, Stevenson House, Haddington (gr. Mr. J. Bortowman), for Dumelow's Seedling; and J. NEILSON, Esq., of Mollance, Castle Douglas (gr. Mr. J. M. Stewart), for any other dessert Apple, with Devonshire Quarrenden. There were three entries for each of the three collections of Pears. Mr. R. STAWARD was placed 1st for 12 varieties (4 fruits of each), and J. BRENNAND, Esq., Thirsk, Yorks (gr. Mr. J. E. Hathaway), 1st for 6 varieties (6 fruits of each), while A. M. T. FLETCHER, Esq., of Saltoun, East Lothian (gr. Mr. R. Pow), excelled for a collection of 6 varieties (6 fruits of each) grown in Scotland. In the single-dish classes (6 fruits in each), the competition in which is restricted to Scotland, W. CORMACK was 1st for Beurré d'Amanlis and Louise Bonne of Jersey; G. BELL BROWN, Esq., The Firs, Bigar, for Conference; J. NEILSON, Esq., for Durondeau and Pitmaston Duchess; J. G. A. BAIRD, Esq., Colstoun, Haddington (gr. Mr. D. G. Robertson), for Jargonelle; A. M. T. FLETCHER, Esq., for Souvenir du Congrès; the Earl of DALHOUSIE, Panmure, Forfarshire (gr. Mr. J. Simpson), for Williams' Bon Chrétien; Lady CHARLES MERCER, for any other dessert variety (with Marguerite Marillat); and J. MONCRIEFF WRIGHT, Esq., Kinmonth, Bridge of Earn (gr. Mr. J. Hoggarth), for any other stewing variety. Miss HAMILTON, Rozelle, Ayr (gr. Mr. A. Harvey), excelled for 4 dishes of pot-grown or orchard house Pears (5 fruits to each dish). In the other single-dish classes, the TRUSTEES OF THE LATE SIR E. MOSS, Middleton Hall, Midlothian (gr. Mr. J. M'Cartney) were 1st for Gooseberries and Black Currants; Sir GEORGE SUTHERLAND, Cringletie, Peebles (gr. Mr. J. M. Mason), for Red Currants; J. MONCRIEFF WRIGHT, Esq., for Loganberries, and Sir HERBERT MAXWELL, for Cherries.

PLANTS.

Sir ROBERT USHER, Bt., Norton, Midlothian (gr. Mr. G. M'Kinn), was the only exhibitor in the class for 4 stove or greenhouse plants in flower, and was awarded the 1st prize. Sir ROBERT USHER also excelled for 1 stove or greenhouse plant in flower, for 1 Cycad, and for 3 Zonal and 3 Ivy-leaved Pelargoniums respectively. J. S. CLARK, Esq., Dundas Castle, Midlothian (gr. Mr. F. M. Urquhart), was 1st in the class for 4 Orchids, distinct, and R. HINDLE, Esq., Edinburgh (gr. Mr. S. Houlden), for 1 Orchid and also for 3 Cypripediums. In the Fern classes, J. HERDMAN, Esq., Edinburgh (gr. Mr. J. Hermiston), was placed 1st for 4 exotic species and for 4 Adiantums; and ALEX. COWAN, Esq., Valleyfield, Penicuik (gr. Mr. J. TURNBULL), took 1st place for 4 British Ferns (excluding dwarfs) and also for 9 dwarf hardy Ferns; and Mr. J. MACKENZIE, Newbridge, Midlothian, excelled for 6 Scolopendriums. Mrs. HUTCHISON, Carlowie, Westlothian (gr. Mr. J. Thom), was placed 1st in both classes for 6 foliage plants, and also for 2 Codiaeums and for 2 Aralias; and Mrs. SIMSON, Bonaly Tower, Midlothian (gr. Mr. J. Fraser), and W. A. WHITELAW, Esq., Greenpark, Midlothian (gr. Mr. W. Wood), were placed 1st for 2 Palms and 1 Palm respectively. Wm. BAIRD, Esq., of Elie, Fife (gr. Mr. A. A. Law), excelled in the classes for 2 Dracaenas and for 6 table plants, and W. A. WHITELAW, Esq., was 1st for 2 Coleus. With the exception of one class for 3 singles, the 1st prizes for Begonias were won by General COCKBURN, Inveresk, Midlothian (gr. Mr. A. M'Innes); G. D. MACKAY, Esq., Inveralmond, Midlothian (gr. Mr. J. A. Sword), and Mr. R. BOYD, Bo'ness, excelled for Fuchsias; Mrs. SIMSON, for Chrysanthemums; Col. MORE NISBET, The Drum, Midlothian (gr. Mr. R. Whannell); and Mrs. CALLANDER, Cramond House, Midlothian (gr. Mr. D. Fraser), for Liliums; Captain GORDON, for Vallota; A. DRYBROUGH, Esq., Gogar Park, Midlothian (gr. Mr. A. Findlay),

for 1 Hydrangea; and the Right Hon. R. C. MUNRO FERGUSON, Raith, Fife (gr. Mr. D. M'Lean), for Celosias.

CUT FLOWERS.

The Sweet Pea classes were disappointing, as only one of the three classes was represented, and the specimens were not so fine as have been seen at other exhibitions this season. The cut flowers generally were excellent, and with the exception of Gladioli and one or two other classes the competition was good. The 1st prizes were awarded to Mrs. ANDERSON, Hallyards, Peebles (gr. Mr. J. Bertram), for 12 vases Phloxes and for 6 Hollyhock spikes; Mr. DAVID BARBOUR, Lochwinnoch, for 12 Cactus Dahlias; Lord ELPHINSTONE, for 6 Paeony Dahlias; and Mr. C. JENKINS, Cambuslang, for 6 Pompon Dahlias. Mr. T. KIRKWOOD, Crieff, was placed 1st among five competitors for 6 bunches Sweet Peas. Roses were shown in good condition, and the competition was good. For 24 blooms, not fewer than 18 varieties, there were 5 exhibitors, and the 1st prize was awarded to the Earl of DALHOUSIE, Panmure, Forfarshire (gr. Mr. J. Simpson). The same competitor was also placed 1st for 12 H.T. blooms, and for 12 Teas. Other competitors who were awarded 1st prizes were Mrs. RUSSELL, Newtonmearns, for 6 of any scarlet or crimson Rose (with Hugh Dickson); Sir BASIL MONTGOMERY, Kinross House (gr. Mr. R. Fraser), for 6 of any pink variety (with Caroline Testout); and G. A. TURNBULL, Helensburgh, for any 6 white blooms (with Frau Karl Druschki). Mrs. RUSSELL also excelled for 6 blooms in 6 varieties; Sir R. C. MUNRO FERGUSON for 6 vases of Ramblers; and Mr. G. A. TURNBULL, Helensburgh, for a single vase of Roses. Mr. D. HALLEY, Broughty Ferry, excelled for 3 vases of border Carnations; and J. G. THOMSON, Esq., Norwood, Alloa (gr. Mr. J. Small), was 1st for 3 vases of perpetual-flowering varieties. Mr. E. ROBERTSON, Linlithgow, was 1st for 12 fancy Pansies, and also for 12 show Pansies; and Mr. M. MILLIGAN, Wishaw, excelled for 12 sprays of Violas. In the classes for early-flowering Chrysanthemums, Sir R. C. MUNRO FERGUSON was 1st for 12 vases and also for 1 vase of a white variety. Captain GORDON, Threave House, Castle Douglas (gr. Mr. J. Duff), excelled for Michaelmas Daisies; Mrs. REID, Thomanean, Milnathort (gr. Mr. J. Pearson), for 6 bunches of hardy herbaceous perennials; Wm. BAIRD, Esq., Elie, Fife (gr. Mr. A. A. Law), for Montbretias; G. D. MACKAY, Esq., Inveralmond (gr. Mr. J. A. Sword), for hardy and half-hardy annuals and single Asters; and Mr. T. M. KIRKWOOD for double Asters.

VEGETABLES.

There were two exhibitors in the class for a display of vegetables, on a space covering 4ft. by 4ft. The Earl of HOME, K.T., Bothwell Castle, Lanarkshire (gr. Mr. W. P. Bell), was awarded the 1st prize. The collection consisted of Leeks (Lyon), Cauliflower (All the Year Round), Celery (Solid White), Carrots (Intermediate), Parsnip (Dobbies' Prolific), Peas (Rearguard), Cucumbers (Peerless), French Beans (Superlative), Turnips (Golden Ball), Onions (Ailsa Craig), and Tomatos. The other collection was from Sir HERBERT MAXWELL, and was awarded the 2nd prize. In the single-dish classes the entries were fewer than usual. STEPHEN MITCHELL, Esq., Boquhan, Stirlingshire (gr. Mr. C. Shaw), won the 1st prizes, offered by Mr. J. Wilson, Hereford, for 5 Cranston's Excelsior Onions grown in Scotland.

OPEN CLASSES.

In the class for 24 Gladioli, not more than 2 spikes of any variety, Messrs. GEORGE MAIR AND SONS, Prestwick, secured 1st place with a very fine collection, Messrs. A. E. CAMPBELL AND SON, Gourrock, being placed 2nd. Mr. J. SMELLIE, Busby, was the only exhibitor in the class for a collection of Dahlias, on a space 7ft. by 5ft., and he was awarded the 1st prize. Mr. SMELLIE also obtained 1st prizes for 6 vases Pompon Dahlias and 12 vases of border Carnations or Picotees. Mr. A. GRANT, Bo'ness, excelled for 8 vases of Collette Dahlias. Messrs. HUGH DICKSON, L.R., Belfast, secured 1st place for 36 Roses, and also for 18 H.T. Roses. Messrs.

D. AND W. CROLL, Dundee, were 1st for 18 Tea Roses, and also for 12 of any pink Rose. Mr. W. FERGUSON, Dunfermline, was placed 1st for 12 of any red or crimson Rose, for 12 of any white Rose, and for a bowl of China Roses. Mr. R. C. FERGUSON, Dumfries, secured the 1st prizes in the classes for 12 vases exhibition Roses, 12 vases garden or decorative Roses, and a collection of Roses exhibited in a space of 15ft. by 5ft.

AWARDS.

FIRST-CLASS CERTIFICATES.

Collette Dahlias Scarlet Queen, Doon, Ouse, Cormorant, Peacock, Linnet, and Nightingale, exhibited by Messrs. DOBBIE AND CO., Edinburgh.

Collette Dahlias Liberton and Greenpark, exhibited by Mr. W. WOOD, Greenpark, Liberton, Midlothian.

Aster amellus King George, exhibited by Mr. W. WELLS, jun., Mersham.

AWARDS OF MERIT.

Collette Dahlia Starling and Single Dahlia Lagos, exhibited by Messrs. DOBBIE AND CO.

NON-COMPETITIVE EXHIBITS.

The following Medals were awarded for groups:—Gold Medals to Messrs. STORRIE AND STORRIE, Glencarse, Perthshire, for fruit trees in pots and Celosias; Messrs. DOBBIE AND CO., Edinburgh, for Roses, Dahlias, and Sweet Peas; Mr. JOHN DOWNTIE, Edinburgh, for Begonias, Phloxes and herbaceous plants; Messrs. JAMES COCKER AND SONS, A'erdeen, for Roses and herbaceous plants; Messrs. SUTTON AND SONS, Reading, for vegetables.

Silver-gilt Medals to Wm. WELLS, jun., Mersham, Surrey, for Delphiniums; Messrs. JOHN FORBES (Hawick), LTD., for Phloxes, Pentstemons; Messrs. CUNNINGHAM, FRASER AND CO., Edinburgh, for herbaceous plants; Messrs. HARKNESS AND SONS, Bedale, Yorks, for Gladioli and herbaceous plants; Messrs. ALLWOOD BROTHERS, Haywards Heath, Sussex, for Carnations; Messrs. SANDER AND SON, St. Albans, for Orchids; Messrs. R. B. LAIRD, DICKSON AND SONS, LTD., Edinburgh, for Roses, Carnations and floral designs.

Silver Medals to Messrs. THYNE AND SON, Dundee, for Phloxes; Mr. D. McOMISH, Crief, for herbaceous plants; Mr. J. WILSON, Hereford, for Crauston's Excelsior Onions; Messrs. CHAS. IRVINE AND SONS, Jedburgh, for Phloxes and Pentstemons; and Messrs. CHAS. FAIRLEY AND CO., Cairneyhill, Fife, for Roses.

NATIONAL DAHLIA.

SEPTEMBER 14.—The annual exhibition of this Society was held in conjunction with the R.H.S. meeting on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster. This is the first occasion on which this show has been held in the R.H.S. Hall, and although it was much smaller than those held in previous years at the Crystal Palace, it was a success. Fourteen new varieties were awarded the Certificate of Merit (see p. 187).

NURSERYMEN'S CLASSES.

Show and Fancy Dahlias.—There was only one exhibit in the class for 24 blooms of show Dahlias, distinct, and it was awarded the 1st prize. The exhibitors were Messrs. W. TRESEDER, LTD., The Nurseries, Cardiff, who showed blooms of good average quality, notable varieties being George Rawlings (deep maroon), William Powell (golden yellow), Warrior (intense scarlet), Mrs. Gladstone (white, the outer florets being bluish-pink), and Purple Prince (bright purple).

Cactus Dahlias.—The principal class in this section was for 18 blooms, distinct, and there were two competitors. Messrs. JAMES STREDWICK AND SON, Silverhill Park, St. Leonards-on-Sea, were awarded the 1st prize for a magnificent collection, many of the varieties being seedlings raised by this firm. Conspicuous varieties were: Pierrot (deep yellow florets with white tips), F. W. Fellowes (bright orange scarlet), A. R. Perry (rose-pink tipped with yellow), Searchlight (bright yellow), Washington (crim-

son), and Gossamer (golden yellow). The 2nd prize was awarded to Messrs. J. BURRELL AND CO., Howe House Nurseries, Cambridge, and amongst the fine specimens, which closely contested those awarded the premier place, we noticed the varieties Coyness (mauve with white centre), George Schofield (yellow centre suffusing to apricot, tinged with pink), Esmée (lemon), Cygnet (yellow, striped scarlet).

In the class for 48 blooms, distinct, shown on boards, there was better competition. The 1st and 2nd prizes were again won by Messrs. JAMES STREDWICK AND Messrs. J. BURRELL AND CO. respectively, the competition being very close. Amongst the varieties exhibited by Messrs. Stredwick were fine specimens of F. W. Fellowes, Calliope (deep mauve), Diana (lemon), M. Phillips (white), Golden Crown (bright lemon), and Gwen Tucker (bluish-pink with white centre); Messrs. J. Burrell and Co. showed well-grown flowers of the varieties Golden Crown, Prince Arthur (pure scarlet), Silver King (cream), and The Imp (deepest maroon).

Messrs. W. TRESEDER, LTD., Cardiff, were the only competitors in the class for 24 blooms, distinct, and were awarded the 1st prize for a collection of choice blooms of such varieties as Frances White (pure white), Arthur Pickard (salmon-pink with cream centre), and Pride of Essex (bright yellow).

Garden Cactus Varieties.—Messrs. J. CHEAL AND SONS, LTD., Crawley, were the only competitors in the class for 12 varieties, distinct, six stems of each variety to be arranged in each vase. The exhibit was arranged very pleasingly, the blooms being relieved with sprays of Asparagus, Prunus pissartii, Eulalia japonica, Lonicera japonica and such berries as Sea Buckthorn and Snowberry. Amongst the varieties which attracted special notice were Mary Purrier (crimson), Star (bronze yellow), Duchess of Marlborough (pink shading to white), Mrs. Forrester Paton (brilliant crimson-scarlet), Homer (bright maroon), and Sweetbriar (clear pink).

Pompon Varieties.—There was only one exhibitor in the class for 24 varieties of Pompon Dahlias, distinct in bunches of 10 blooms each, but although Mr. CHARLES TURNER, Slough, Buckinghamshire, had no competitor, he well deserved the 1st prize awarded, for his blooms were uniformly good, and staged with due care for colour effect. The varieties Douglas (deep maroon), Bacchus (scarlet), Nerissa (pale magenta), Darkest of All (very dark maroon), Queen of Whites (pure white), and Glow (salmon cerise), were especially good.

Single Dahlias.—In the class for 24 varieties of Single Dahlias, distinct, in bunches of 10 blooms each, the only entry was made by Messrs. J. CHEAL AND SONS, LTD., who always show this type of Dahlia uniformly well. Although the method of staging in flat pyramids is somewhat stiff, it allows the beauty of individual flowers to be seen to advantage. Messrs. CHEAL staged such choice varieties as Brilliant (crimson-scarlet), Althea (buff), Leon (scarlet), Beacon (rich golden-yellow), Albatross (pure white), Winona (deep maroon), and Marion (buff suffused with mauve).

Paeony-Flowered Dahlias.—The schedule called for six varieties, distinct, and the only exhibitor was Mr. CHAS. TURNER, whose specimens were a trifle coarse. He was awarded the 1st prize. The two finest varieties were Primrose Queen (clear yellow) and Aphrodite (white).

Collette Dahlias.—There were two exhibits in the class for 12 varieties, distinct, and Mr. CHAS. TURNER was again placed 1st, exhibiting large blooms which included the varieties Holyrood (ruby with golden tips and yellow colerette), Antverpia (scarlet with yellow collar), and Negro (maroon). 2nd, Messrs. J. CHEAL AND SONS, with smaller flowers, including good specimens of the varieties Antverpia and Lemon Queen.

For a decorative vase of Paeony-flowered Dahlias, Messrs. W. TRESEDER, LTD., were awarded the 1st prize.

A class was provided for Miniature Cactus Dahlias, and this was open to all members of the Society. The flowers were very attractive, but there was only one exhibitor, Messrs. J. BURRELL AND CO., who were awarded the 1st prize for splendid blooms of Coronation (scarlet), Snowbird (white), Minima (violet-crimson),

Crimson Crown, Kathleen (lilac-mauve), and others.

Fancy Single Dahlias.—Messrs. J. CHEAL AND SONS were the only competitors in the class for 12 varieties in bunches of 10 blooms each, and were awarded the 1st prize for excellent specimens of such varieties as Leslie Searle (silvery-lilac), Leander (maroon), Elsie (crimson, edged with white), Brenda (white, edged with scarlet), Stromboli (maroon, tipped white), and Tommy (yellow, striped scarlet).

There was a similar class for six fancy Cactus Dahlias in bunches of six blooms each. Messrs. JAMES STREDWICK AND SON had no rival, and were awarded the 1st prize for meritorious blooms, including Pierrot (deep amber tipped with white), and Uranus (white, striped vermilion).

AMATEUR CLASSES.

Show or Fancy Dahlias.—There were two competitors in the class for 24 blooms, distinct, for which a Silver Challenge Cup was offered. The trophy was won by Mr. S. H. COOPER, The Hamlet, Chippenham, Wiltshire, who had meritorious blooms of uniform size, excellent colour, and good quality. Outstanding specimens were of the varieties Warrior (scarlet), Standard (dark chocolate), W. Powell (golden-yellow), Harry Keith (rosy purple), Mrs. Gladstone (bluish-pink shading to cream), and M. Fellowes (pale mauve shading to white). 2nd, Mr. R. BURGIN, St. Mary Street, Bedford, who showed rather smaller specimens of the varieties Esmond (yellow), Miss Fox (mauve), Harry Keith, and others.

In the class for 12 blooms, distinct, Mr. R. C. UNWIN, The Green, Histon, Cambridgeshire, was placed 1st; 2nd, Mr. W. POUND, South View, Chippenham, Wiltshire, whose specimens were rather larger but of less variety of colour than those which were awarded the 1st prize.

There were four competitors in the class for six blooms, distinct, and Mr. A. P. IRONSIDE, The Hamlet, Chippenham, excelled, showing the varieties Chieftain (magenta), M. Fellowes (pale mauve shading to cream), Rev. Camm (yellow, striped with red), Shotesham Hero (white ground, tipped and shaded mauve), F. Pearce (magenta), and Goldsmith (yellow with red markings). 2nd, Mr. R. GREENFIELD, Benton Place, Shipley, Morsham, Sussex, with the varieties R. T. Rawlings (yellow), Mrs. Gladstone (pale salmon-pink shading to white), Marjorie (yellow with brown markings), Standard (dark chocolate), and Florence Tranter (cream with mauve markings). 3rd, Mr. S. T. WHITE, North End, Eastleigh.

Garden Cactus Dahlias.—A Silver Challenge Cup was offered in the class for six varieties, six specimens in each vase, and there were three competitors. The judges awarded the Cup to the Rev. A. BRIDGE, Worth Rectory, Three Bridges, Sussex, who showed the best blooms. The decorations were a little overdone, and this was a fault in all the exhibits. Amongst the conspicuously good varieties exhibited were White Ensign, the Hon. Mrs. Greville (buff shading to yellow), and Mary Purrier (scarlet). 2nd, Mr. A. C. PALMER, Cloverley, West Hill, Putney (gr. Mr. C. Blake).

In the class for two varieties, the 1st prize was awarded to Mr. A. F. TOFIELD, Holmdale Park Road, Chandlersford, Hampshire. 2nd, Mr. S. T. WHITE.

Cactus Dahlias.—A Silver Challenge Cup was offered for nine varieties shown in triplets, and there were three competitors, the quality of the exhibits being uniformly good. The Cup was awarded to Mr. F. W. FELLOWES, The Lane House, King's Walden, Hitchin, who having won the trophy three times in succession it becomes his property. The flowers staged were of excellent quality, being of large size and splendid colour. The varieties were: Miss Stredwick (deep pink), Marguerite Phillips (white), Homer (maroon), Golden Crown (deep gold), J. B. Riding (scarlet), Frederick Wenham (yellow shaded to pink), Gigantic (old gold), Dorothy Hawes (deep pink), and Mrs. Stephens (pale yellow). 2nd, Mr. W. POUND, South View, Chippenham, Wiltshire, who showed neat though smaller blooms.

In the smaller class for six varieties in triplets, Mr. A. C. PALMER won the 1st prize in a good competition.

Mr. R. C. UNWIN excelled in the class for 24 blooms, distinct, shown on boards. 2nd, Mr. H. LANGRIDGE, Dalston. For 12 blooms, Mr. A. F. TOFIELD was placed 1st, whilst in the class for six blooms Mr. R. FEARN, Shipley Common, Ilkeston, showed the best specimens.

The class for 12 blooms in four varieties, three blooms of each, to be exhibited on a board, attracted the most competitors. The first prize was awarded to Mr. R. C. UNWIN, The Green, Histon, Cambridgeshire, who exhibited excellent specimens of the varieties F. W. Fellowes (reddish orange), Sovereignty (yellow), Mrs. C. Cooper (yellow with pink tippings), and John Riding (crimson). 2nd, Mr. H. BROWN, Dahlia Dene, Luton, Bedfordshire.

Pompon Dahlias.—The exhibits of Pompon Dahlias in the amateur classes were excellent. In the larger class for 12 varieties, for which a Silver Challenge Bowl was offered, Mr. A. P. IRONSIDE was placed 1st with neat specimens of such varieties as Idea (yellow), Darkest of All (deep maroon), Queen of the Whites, Florence (mauve), and Glow (salmon). 2nd, Mr. G. DAVIDSON, Thornton Heath.

Five competed in the class for six varieties, and the 1st prize was awarded to Mr. W. POUND for Queen of the Whites, Marietta, Florence (mauve), Clarence (maroon), E. Bryant (yellow marked with red), Ruby (crimson). 2nd, Mr. R. C. UNWIN.

Single Dahlias.—There were two classes for singles, for twelve and six varieties respectively. In the larger class there were two good exhibits, and the better was shown by Rev. A. BRIDGE, with the varieties Snowdrop (white), Mrs. Joynton Hicks (buff), and Flora (reddy-brown). 2nd, Mr. A. BROWN, Grange Road, Leagrave, Bedfordshire. Mr. C. LUCKIN, Thakeham Place, Pulborough, Sussex, was placed 1st for six varieties.

Star Dahlias.—Prizes were offered by Messrs. Cheal and Sons, Crawley, for one vase of Star Dahlias; Mr. GEO. DAVIDSON was placed 1st.

Decorative Dahlias.—Mr. J. A. Jarrett met with great success in the classes for (1) Decorative Dahlias, in four varieties, (2) Paecony-flowered Dahlias, and (3) Collette Dahlias.

A special section was provided for amateurs and gardeners who have never won a prize at any previous exhibition held by the National Dahlia Society.

Mr. H. D. GOFFEE, Islington, excelled in the class for six Cactus varieties, distinct, in bunches of three blooms each, exhibiting well-grown specimens of the varieties Golden Crown, Johannesburg (old gold), Mrs. D. Fleming (white), Fulgent (dark scarlet), Harold Peerman (lemon) and Mrs. Stephens (cream). 2nd, Mr. J. WHITE, Wood Lane, Chippenham, Wiltshire.

There were five entries in the class for six Cactus blooms, distinct, to be shown on a board, the 1st prize being presented by Messrs. E. A. White, Ltd., Paddock Wood. The most successful exhibitor was Mr. W. H. CORLEY, Seven Kings, Essex.

The "Cory" Cup offered for a group of Decorative Garden Dahlias occupying a table space of 25 feet by 3 feet, was awarded to Messrs. W. TRESEDER, LTD., Cardiff.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 2.—*Committee present:* Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. J. Bolton, J. C. Cowan, J. Evans, P. Foster, A. R. Handley, Dr. Hartley, J. Lupton, D. McLeod, W. Shackleton, S. Swift, H. Thorp, Z. A. Ward, G. Weatherby, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Miltoniada Harwoodii var. *Mad. Le Doux* (M. rex. × C. Noctiana), a crimson scarlet flower of good form and size, with large, flat lip, shown by Mrs. LE DOUX.

Odontioda Brewii var. *Brunette*, a fine flower, sepals and petals chestnut red, lip orange chrome, from R. ASHWORTH, Esq.

Cattleya Venus Haddon House var. (Iris × aurea), a large flower with yellow veining in the centre of the petals, from P. SMITH, Esq.

AWARDS OF MERIT.

Cattleya Sibyl var. *aurea* and *Odontioda Brewii Heliotropium*, both from R. ASHWORTH, Esq.

Laelio-Cattleya George Woodhams Morfield var. (L. purpurata × C. Hardyana), both from Mrs. LE DOUX.

Cypripedium Solon St. Mary's var. (tonsum × *Rothschildianum*), from the Rev. J. CROMBLEHOLME.

Laelio-Cattleya Rachel (C. Iris × L. C. Blotchleyensis), from P. SMITH, Esq.

FIRST-CLASS CULTURAL CERTIFICATE.

Mr. E. ROGERS, gr. to O. O. Wrigley, Esq., for fine examples of *Vanda coerulea*.

The following Medals were awarded for groups:—

R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden), was awarded a *Large Silver Medal* for a group: *Cattleya Sibyl* var. *aurea* (A.M.) and *magnifica*, Iris, Harrisonae Ashlands var.; *Laelio-Cattleya* Walter Gott Ashlands var.; *Excelsis*, Ophir and Henry Greenwood; *Odontoglossums*: *Odontioda Brewii* vars. *Brunette* (F.C.C.), *heliotropia* and *Diana*; *Vanda coerulea*, *Miltonia Roezeli* alba, *Cypripedium Amesii* var. *Black Watch* and others.

Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton), was awarded a *Silver Medal* for a group composed principally of *Laelio-Cattleyas* (home-raised seedlings), with C. Gaskelliana alba Warburton's var.; *Odontoglossums* and *Odontiodas*, *Miltonia spectabilis* Morelliana, some fine plants of *Epidendrum vitellinum autumnalis* and others.

The Rev. J. CROMBLEHOLME, Clayton-le-Moors (gr. Mr. E. Marshall), was also awarded a *Silver Medal* for a group of *Cypripediums*.

Messrs. A. J. KEELING AND SONS, Bradford, were awarded a *Silver Medal* for a group comprising *Cypripediums* Hassallii, Lord Derby, Solon, A. de Lairese, Sibyl, Euterpe, Princess, Penelope and Mrs. F. L. Ames; *Odontiodas* Euterpe and Lambeauiana, *Dendrobium Dearii*, *Paphinia cristata* and others.

VEGETABLE SHOW AT MANCHESTER.

SEPTEMBER 9-10.—The seventh annual show of vegetables conducted by Messrs. Dickson and Robinson was held on Thursday and Friday of last week in the large hall of the Manchester Coal Exchange. While the exhibitors were fewer than last year, the number of exhibits was much in excess of any previous show.

In the class for four bulbs of Premier Onion, open to the United Kingdom, Mr. TYSOE was 1st, with four Onions of exceptional merit; 2nd, Mrs. Jenner (gr. Mr. Wheeler).

The 1st prize in the class for four bulbs of Premier Onion grown north of Birmingham was won by Lord O'NEILL (gr. Mr. Wadge); 2nd, Right Hon. Lord KENYON (gr. Mr. Rolfe).

The prize offered for the most perfect bulb of Premier Onion was awarded to R. CORY, Esq., Duffryn (gr. Mr. Cobb).

In the class for the heaviest bulb of Premier Onion the specimen exhibited by Lord CURZON (gr. Mr. West) was placed 1st. The bulb weighed 3 lbs. 3 ozs., being $\frac{1}{2}$ oz. heavier than his specimen exhibited last year. Mr. WM. ROBINSON won each of the 1st prizes in the classes for Aviator and Money-maker Tomatos.

In the class for 30 pods of Hercules Pea C. L. BLUNDELL, Esq. (gr. Mr. Guy) was 1st; 2nd, T. C. HORSFALL, Esq. (gr. Mr. Leary). For 30 pods of Lancastrian Pea Mr. WM. ROBINSON was 1st; 2nd, T. C. HORSFALL, Esq. (gr. Mr. Leary).

In the improved climbing French Bean class Sir R. BAKER, Bt., M.P. (gr. Mr. Usher) was 1st; 2nd, G. A. HAGGIE, Esq. (gr. Mr. Castle). In class 10 for 25 pods of Exhibition Runner Beans there was a numerous entry. Mr. WHEELER, gr. to Mrs. Jenner, was 1st with pods 15 inches long; 2nd, Major HEYWOOD LONSDALE (gr. Mr. Mills). Mr. SEARLE, gr. to Lord Northampton, was the winner of the 1st prize for 6 Exhibition Beet; 2nd, C. L. BLUNDELL, Esq. (gr. Mr. Guy). For Crimson Globe Beet Mr. WM. ROBINSON was 1st; 2nd, Mr.

USHER, gr. to Sir R. Baker, Bt., M.P. In the class for 2 heads of Model Cabbage Mr. WM. ROBINSON was 1st; 2nd, Capt. TOWSE, V.C. (gr. Mr. Mossion). Six roots of Perfection Carrot were well exhibited by the Misses Fitzpatrick (gr. Mr. Tysoe), who won the 1st prize, and these ladies excelled for 6 roots of Matchless Carrot; the 2nd places were taken respectively by Lord NORTHAMPTON (gr. Mr. Searle) and W. J. GRESSON, Esq. (gr. Mr. Parry). For 3 heads of Standwell Cauliflower Mr. GEO. ASHLEY was 1st; 2nd, Mr. WM. ROBINSON. For 3 head of Prize Pink Celery there was strong competition, the Misses FITZPATRICK being 1st; 2nd, JOHN HEYWOOD, Esq. (gr. Mr. Jenkins). JOHN HEYWOOD, Esq., was easily 1st with a fine brace of the Cropper Cucumber; 2nd, Sir R. BAKER, Bt., M.P. (gr. Mr. Usher). In the class for 6 plants of Exhibition Leek Mr. WM. ROBINSON, Garstang, was 1st with splendid roots; 2nd, Sir R. BAKER, Bt., M.P. For 6 roots of Selected Hollow-crown Parsnip, the Right Hon. Lord CURZON (gr. Mr. West) was placed 1st; 2nd, Lord NORTHAMPTON. The classes for 6 tubers of white and 6 of coloured Potatoes were well represented, and aroused considerable interest. The winners for the white varieties were: 1st, the Misses FITZPATRICK; 2nd, C. L. BLUNDELL, Esq. (gr. Mr. Guy); the order being reversed in the class for coloured varieties. Forty roots of Scarlet Globe Radish proved an attractive class, the prize-winners being, 1st, T. C. HORSFALL, Esq. (gr. Mr. Leary); 2nd, JOHN HEYWOOD, Esq. (gr. Mr. Jenkins). In the class for 2 heads of Early Favourite Savoy T. MARSHALL, Esq. (gr. Mr. Brickell) was 1st. The class for 6 roots of Manchester Market Turnip drew many entries, and Mrs. OLIVER (gr. Mr. Wood) excelled. In the class for one brace of Vegetable Marrows the 1st prize was awarded to Mr. WM. ROBINSON. There was also a class for 12 blooms of Cactus Dahlias (distinct), in which JOHN HEYWOOD, Esq. (gr. Mr. Jenkins) was placed 1st.

A special prize was offered to the winner of the greatest number of prizes, and was awarded to Mr. WM. ROBINSON, who had been successful in ten classes.

Messrs. DICKSON and ROBINSON exhibited cut blooms of Dahlias and Gladioli grown at their trial grounds; also Onions, Peas, Tomatos and Marrows grown under market garden conditions.

Obituary.

WILLIAM SMITH.—Mr. William Smith, assistant superintendent at Holyrood Palace Gardens, died at the Royal Infirmary, Edinburgh, on the 9th inst. Previous to his appointment at Holyrood Palace, Mr. Smith had been for a considerable time in the Edinburgh Royal Botanic Gardens, where he latterly had charge of the trees and shrubs. Mr. Smith took much interest in the affairs of the Royal Caledonian Horticultural Society and the Scottish Horticultural Association. He is survived by a widow and one child.

J. W. LYNES.—*The American Florist* records the death of J. W. Lynes, which took place in New York on August 20. Mr. Lynes was born in England in 1866, and emigrated to America about twenty-five years ago. He was engaged in the establishments of various florists and seed merchants, and finally entered the seed business of Peter Henderson and Co., of New York, where he remained for eleven years. His death was caused by a paralytic stroke.

TRADE NOTE.

CARTER PAGE AND COMPANY.

A PRIVATE company has been registered under this title, with a capital of £10,000 (£1), to take over as a going concern the business carried on by C. Carter Page and C. W. Carter Page, as Carter Page and Company, at 52-3, London Wall, E.C., agriculturists, arboriculturists, and horticulturists.

LAW NOTE.

WEEDS IN A DUBLIN GARDEN.

ON September 3, a labourer at Dublin was summoned at the suit of the Department of Agriculture under the provisions of the Noxious Weeds Act for refusing to comply with an order of the Department to have the plot of ground attached to his cottage cleared of noxious weeds. Mr. Robertson, solicitor, of the Chief Crown Solicitor's Office, appeared for the Department, and said that the tenants of eighteen or twenty other cottages which had been erected by the District Council kept their plots in perfect order. The defendant allowed weeds to grow and the seeds were carried to neighbouring gardens. Mr. P. McGovern, an official of the Department, stated that he inspected the plot on August 7 and 14, and found it covered with Thistles and Dock. It was still in that condition. A fine of 20s. was imposed.

GARDENING APPOINTMENTS.

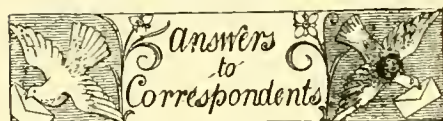
[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made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

Mr. G. W. Hillier, for the past 3 years Gardener to G. S. CHARRINGTON, Esq., Burya Court, Leigh, Reigate, previously 9 years at the Hermitage, Harrow Weald, and 4 years at Holmby St. Mary, as Gardener to Mrs. W. CAMPBELL, Upper Gattin Park, Merstham, Surrey. [Thanks for 2s. for R.G.O.F. box.—EDS.]

Mr. F. Jackson, previously Gardener to Major SPENCER, The Oaklands, Bunbury, Tarporley, as Gardener and Steward to General NUGENT, Farrer-Connell, Mount Nugent, Co. Cavan.

CATALOGUES RECEIVED.

W. SAMSON AND Co., 8 and 10, Portland Street, Kilmar-nock.—Bulbs.
UPSTONES', 35, Church Street, Rotherham.—Bulbs.
W. WELLS, Jun., Merstham, Surrey.—Hardy Herbaceous and Alpine Plants.
T. S. WARE, LTD., Feltham.—Bulbs.
W. SMITH AND SON, Aberdeen.—Bulbs.
ED. WEBB AND SONS, Stourbridge.—Bulbs.



CATERPILLAR: E. F. The caterpillar you send is the larva of the Privet moth (*Sphinx ligustri*), so called in reference to the plant on which the larva chiefly feeds. The moth is a common British insect, although it is seldom seen on account of its feeding by night; it is very handsome, with wide, prettily-coloured wings. The upper wings are a warm brown, mottled with darker brown; the lower ones are pink, crossed by three almost horizontal black bands. The caterpillars feed, as mentioned above, on the common Privet, and are usually to be found in profusion near that plant. The best way to ascertain the presence or absence of the larvae is to examine the ground beneath the bushes. If the caterpillars are present, tiny oblong bundles of masticated leaves will be found.

CHERRY ORCHARD: A. E. H. Cherries grown for market are best planted in orchards, and as the grass must be kept short, it is desirable to introduce cattle. For this reason it is usual to plant standard trees with stems not shorter than six feet, as otherwise the cattle would browse on them. When Cherries are grown in cultivated ground, the growth is usually too gross, and the wood does not ripen properly. With reference to varieties for market, we should recommend Black Eagle, Kentish Bigarreau, Black Heart, Early Amber and Early Rivers. Governor Wood is a good variety, but the fruits are liable to split; Elton Heart is too delicate for market pur-

poses. As regards your suggestion to grow Black Currants between the trees, this would not be practicable if you plant on pasture-land.

INSECTS ON LIME: W. D. W. The bark is covered with a mite, *Tetranychus tiliarum*, which often occurs on the leaves, spinning a fine web and forming masses on the bark. There were also two crushed lepidopterous larvae living in the bark, but these were too damaged to identify. A species called *Chrysoclista linneella* is recorded living under the bark of Limes, especially in the London parks and suburbs. It may be this species.

LOGANBERRY: Ph. J. According to Bailey's *Cyclopaedia of American Horticulture*, the Loganberry is said to be a hybrid produced at Santa Cruz, California, in 1881, by Judge J. H. Logan, from a seed of the Auginbaugh Blackberry, accidentally fertilised from an adjacent Raspberry, supposed to be the old Red Antwerp. The Auginbaugh is a pistillate variety of *Rubus vitifolius*, the wild Blackberry of California, and was a chance seedling found beneath the Oaks of Alameda about 1860.

MILDEW ON VINES: F. S. Flowers of sulphur will destroy mildew on Vines while there is sufficient sun-heat to raise the temperature occasionally to 80° in the shade. It is not sufficient merely to dust the sulphur on the bunches, as the foliage and stems are also attacked. The sulphur may be mixed with water, half a pound of sulphur to one gallon of water, using soapuds first to make it into a paste. Apply the solution through the nozzle of a syringe, placing the finger against the nozzle to form a fine spray, and stirring well from time to time. A better plan, however, is to use Campbell's sulphur vaporiser, using one ounce of sulphur to each thousand cubic feet, and attending strictly to the directions issued with the machine. A coating of dust will be left on the berries, but this can be blown off the next morning with a pair of strong bellows or washed off by drenching the plants with soft water. When pruning is completed dress the Vines with soft soap, half a pound to a gallon of water, and as much sulphur as will make a thick paste. The Vines must not be syringed during the spring following this treatment or the sulphur will be washed off.

NAMES OF FRUITS: F. W. C. S. 1, Benrre Capiaumont; 2, Uvedale's St. Germain; 3, Louise Bonne of Jersey; 4, Send again when fully grown; 5, Fondante d'automne; 6, Josephine de Malines.—C. C., Worcester. 1 and 2, Worcester Pearmain; 3, Benoni; 4, Cox's Orange Pippin; 5, Maltster; 6, Charles Ross.—J. J. T. 1, Duchess of Oldenburg (syn. Borowinka); 2, Winter Greening (syn. French Crab).—W. Thompson. We think your Apple is a very fine specimen of the variety Ecklinville Seedling.

NAMES OF PLANTS: T. H. Moore, Isle of Man. *Lycopodium Phlegmaria*, a rather common species throughout the Tropics. The plant should be grown in a stove having an equable temperature and a moist atmosphere; it is very susceptible to injury from cold draughts. You are fortunate in getting the plant from New Zealand alive. The specimen has a freer growth than is usually seen in this country.—Odonto, Wolverhampton. *Odontoglossum odoratum*, sometimes called *O. gloriosum*.—Adrianæ. 1, *Cypripedium concolor* (concolor $\times$ callosum); 2, *Cypripedium Cilix* (Boxallii $\times$ Fairrieannum). T. C. (1) *Achillea umbellata*; 2, *Silene inflata*.—A. R., Norwich. *Ajuga reptans* variegata.

RETARDED LILY-OF-THE-VALLEY and LILium LONGIFLORUM: Edina. Retarded plants of Lily-of-the-Valley may be potted or boxed according to requirements. They should then be placed in a warm propagating case with a bottom heat of 70° to 75° at command. Up to Christmas they will take a month to come into flower. After Christmas they should flower in three weeks. It is a common mistake to keep the cases too moist; this usually results in weak, drooping flower-spikes. The

best results are obtained by using new season's crowns which have been placed in a refrigerator for about a month before forcing. Untreated crowns can easily be made to flower at Christmas if they are lifted as soon as the foliage dies down, potted or boxed, and then exposed by standing in the open. As regards *Lilium longiflorum*, your poor results are probably due to forcing before the pots are well filled with roots. No bulbs used for forcing give good results unless they are well rooted. After potting they should be placed in a cold frame or house, and the pots covered with leaf-mould or fibre. This keeps them moist and does away with the need for frequent watering, which tends to make the soil sour before there is much root-action. When well rooted the plants should be introduced into a forcing house where a steady temperature of 65° to 70° can be maintained. The time of flowering will depend a good deal on the variety used, also on the cultural and climatic conditions. Plants may flower in four months from the time of potting, but it is best not to hurry them if first-class blooms are desired.

ROSES: R. F. S. We should say that, excluding Hybrid Perpetuals, the following six Roses produce the largest flowers:—Mildred Grant, Edgar M. Burnett, Florence Pemberton, Mrs. Charles Russell, Mrs. Geo. Sawyer, Mrs. Wallace Rowe. We have placed them in order of size, as you desire.

TRANSPLANTING A MAGNOLIA: J. P. The best time to transplant Magnolias is about the middle or end of May, when the young growths are about an inch long, but you can shift the tree at the end of September if you exercise great care with the roots. As the tree is near a building the ground is probably on the dry side; therefore the first thing to do is to soak the roots well with water on two or three occasions. This is best done by making a basin one foot deep about four feet from the stem, and filling it with water. Reduce the head of the tree about one-third, cutting away branches which can best be spared. In removing the tree open a trench six feet from the stem down to the bottom of the roots, cutting the latter cleanly with a knife. Reduce the soil to about four feet from the stem, taking care to protect the roots from sun and wind. When you have dug below the level of the roots, tunnel carefully under the ball of soil from either side, and work three-inch planks under the base until the ball rests on a plank bed. The whole can then be moved on rollers and planks to the desired spot. It is a long and rather tedious operation, but the great point is to shift the plant with a good ball of soil. When replanted the soil should be thoroughly soaked with water, and if the weather is dry, syringe the top growth on frequent occasions.

VIOLET LEAVES: W. W. R. The scorched patches on the Violet leaves are caused by a fungus called *Ascochyta violae*. It is a difficult pest to eradicate, as the numerous minute spores fall from the leaves to the ground, and there quickly produce a crop which continues the disease on new leaves. It is, therefore, advisable to burn the plants, sterilise the soil, disinfect the frame, and plant clean stock in fresh soil. When the plants are well established spray the plants and soil at intervals of a fortnight with potassium sulphide, at the strength of 1 oz. of potassium sulphide to 3 gallons of water.

WOOD-ASH: W. C. S. Yes, the wood-ash from a baker's oven would certainly contain potash, and would form a useful manure.

Communications Received.—S. V. H.—B. R.—C. E. D.—H. G. S.—Mrs. E. W.—W. K.—T. S.—A. J. O.—J. V. M.—S. C.—J. E. H.—W. T. & Co.—A. J. L.—L. T. P.—J. E. T.—H. C. E.—E. F.—A. M.—R. F. F.—Shrub.—F. W. C. S.—O. C.—J. T.—R. & Co.—A. E. H.—F. J.—W. L.—P. A. E.—M. B. (Java)—G. M. T.—A. D. W.—Lady C. M. G.—E. B.—Miss D.—C. J. B. M.—R. A. M.—H. S.—H. B.—E. M. H.—A. & B. S.—A.—H. B.—W. T.—A. B. J.—A. G.—E. T.—F. O. F.—Dr. H.—J. C.—E. A. B.—W. E.—A. C. B.

THE Gardeners' Chronicle

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LEAF-SPOT DISEASE OF LIME.

DURING last June complaints were received of disease attacking a large Lime tree in a garden at Bearstead, near Maidstone, Kent. The disease attracted attention through many of the young, fully-grown leaves falling to the ground. An investigation of these leaves showed that a small, darkish, sunken spot was present on the leaf-stalk (see x in fig. 64). Microscopic examination led to the identification of the fungus as *Gloeosporium tiliaeacolum* Allescher, already known on the Continent as the cause of a more or less serious disease of the Lime, but not hitherto recorded in this country. On a visit being paid to the garden early in July, it was found that the leaf-fall had ceased, but numerous affected leaves, bearing the characteristic, well-defined spots (see figs. 64 and 65), were found lying on the grass under the tree.

The material collected showed diseased areas on the leaves, petioles and twigs, bearing dark points on their surface. These dark points are the spore-bearing pustules of the fungus, and are at first covered by the epidermis, but later are erumpent, appearing as minute, orbicular bodies with the spore-producing layer on the exposed surface. Each pustule consists of a flat, colourless web of hyphae; on this arise the short hyaline conidiophores which abstrict the conidia (spores) from their free ends. These conidia, though often somewhat irregular in shape, are usually ellipsoidal or oval; they are colourless, sometimes slightly curved, and measure $10-18 \mu \times 4-6 \mu$.

Since, apparently, we have had no experience in this country of the damage the present disease may inflict on Lime trees generally, the following account taken from Dr. R. Laubert's article, "An Important *Gloeosporium*-Disease of the Lime" (*Zeitschrift f. Pflanzenkrankheiten*, Bd. XIV., p. 257, 1904), will be of interest.

The disease, which has been noticed since 1900, is widespread in Germany (and also, apparently, in Denmark), and sometimes attacks the tree so severely that it becomes of economic importance to the gardener and forester. The disease is noticeable first in May, when round, distinct, sharply-limited spots appear on the leaves:

fungus appears on the leaf-stalk in the form of a larger or smaller, usually oval, darkish spot without a distinct margin. The substance of the leaf-stalk at the affected place becomes sunken and destroyed, causing a slight bend in the leaf-stalk at this place. Frequently the attack on the tissues of the petiole is severe



FIG. 64.—LIME LEAVES AFFECTED WITH *GLOEOSPORIUM TILIAECOLUM*: X DISEASED PETIOLE.

these spots are frequently single, but often they are numerous. The substance of the leaf is killed right through, so that the spot is apparent on both surfaces. Usually the spots are distributed irregularly over the leaf, and not uncommonly are so numerous that they coalesce and destroy the greater part of the lamina. On

enough to interfere with the conduction of water, and consequently to cause the whole leaf to wither. It happens frequently also that the fungus so eats into the leaf-stalk at the place attacked that it causes the leaves while still green to fall to the ground. Instances have occurred, for example, in the grounds of the Zoo-



FIG. 65.—LEAF-SPOT DISEASE OF LIME.

1. A diseased shoot; 2. conidial layers of the fungus on a young stem; 3. transverse section of a diseased leaf-stalk; 4. conidia, magnified.

the surface of the larger spots a number of little darkish spots, just visible to the naked eye, often occur. These are the pustules of the conidia of the fungus.

The disease is sometimes confined to the lamina of the leaf. Very often, however, it affects the leaf-stalk (petiole) as well. The

logical Gardens at Berlin, as well as in many other places, where in the latter half of May hundreds and thousands of green leaves could be seen lying on the grass under the affected Lime trees, brought to the ground by the injury caused to the leaf-stalk.

Besides attacking the leaf, the fungus very

frequently extends to the young shoots. On the surface of these, as on the leaf-stalk, it develops (usually on the lower side of the current year's shoot) darkish, concave spots of varying size. The injury to the tissues is often such that it causes the young shoot to curve and dry up at the affected place. Both on the leaf-stalk and on the young shoot the spots develop pustules of *conidia*. The inflorescence and its accompanying bract are also liable to be attacked.

Outbreaks of the disease occur in the spring months only; its course is run by the beginning of summer. Its presence has been noted with certainty only on *Tilia ulmifolia* (*T. parvifolia*), although it is improbable that it does not attack other species.

In the absence of experiments no definite recommendations as to the best methods of controlling the disease can be given. The fungus hibernates on the young affected twigs and in the spring proceeds to attack the young leaves and shoots. Neither the cutting off of the affected shoots nor spraying is practicable in the case of large trees. So far as Dr. Laubert's observations go, the disease varies very greatly in intensity in different years, and usually the damage done is not sufficient to make the taking of remedial measures necessary. On the other hand, however, Dr. Laubert has seen trees which by the end of May were a most pitiable spectacle, since, in consequence of the ravages of the disease, more than half of their leaves had dried up preparatory to their falling off.

It is pointed out that if the disease should unfortunately make its appearance in a nursery, it is advisable that all shoots which show the characteristic, sunken black spots should be cut off and the tree sprayed in April either immediately before or during the unfolding of the leaves, with a suitable fungicide—the best being a one to two per cent. Bordeaux mixture.

In fig. 65 the coloured plate which Dr. Laubert gives is reproduced. 1 shows a shoot with the fungus attacking the leaves and also the surface of the shoot; three leaves have been killed by the fungus. 2 shows a portion of a young shoot with a disensed spot where the conidial layers of the fungus are visible. 3 shows a transverse section of a leaf-stalk at a diseased place; the conidial layer and conidia of the fungus are visible. 4 shows the conidia greatly magnified.

We should be glad if gardeners who have noticed symptoms of this disease on Lime trees in gardens, nurseries, or parks will forward specimens for examination to Wye College, Kent. E. S. Salmon and H. Wormald.

ORCHID NOTES AND CLEANINGS.

HYBRID ORCHIDS.

(Continued from August 28, p. 130.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Cattleya Mignel	B. Digbyana × C. Carmen	Flory and Black.
Brasso-Cattleya Olympus	B.-C. Madame Chas. Maron × C. Hardyana	Sir Geo. Holford.
Brasso-Cattleya The Czar	C. Fabia × B.-C. Digbyano-Mossiae	Armstrong and Brown.
Cattleya Amiel	Dusseldorfei × fulvescens	Sir Geo. Holford.
Cattleya Ashtoniae alba	O'Brieniana alba × Dusseldorfei Undine	Armstrong and Brown.
Cattleya Brilliant	Kienastiana × Hardyana	Sander and Sons.
Cymbidium caudburstiense	Wiganianum × erythrostylum	Armstrong and Brown.
Cypripedium Gypsy	insigne × Watsonianum	W. Bolton, Esq.
Cypripedium Warnham Fairy	Fairieanum × Clinkberryanum	C. J. Lucas, Esq.
Laelio-Cattleya Castanea	L.-C. Marquis de Wavrin × C. Hardyana	J. Gurney Fowler, Esq.
Laelio-Cattleya Goldstick	C. Dowiana aurea × L.-C. Mrs. R. Measures	Sir Geo. Holford.
Laelio-Cattleya Rosette	L.-C. Pallas × C. Warszewiczii	Mrs. Bischoffsheim.
Laelio-Cattleya Sylva	L.-C. Endymion × C. Dowiana aurea	Sander and Sons.
*Laelio-Cattleya Sylph	L.-C. luminosa × C. Warszewiczii	W. H. St. Quintin, Esq.
Laelio-Cattleya Zonave	L. crispata × C. Atalanta	Mrs. Bischoffsheim.
Odontioda laevetiziana	Odm. laeve × C. Noeziana	De B. Crawshaw, Esq.
Odontioda Nirvana	Odm. naevium × Oda. Charlesworthii	Armstrong and Brown.
Odontocidium Juno	Odm. ramosissimum × Oncid. tigrinum	J. and A. McBean.
Odontoglossum Lobbiae	amabile × Pescatorei (not Cobbiae as sometimes recorded)	J. Gurney Fowler, Esq.
Sophro-Cattleya Sylvia	S.-C. Doris × C. Hardyana	J. Gurney Fowler, Esq.

NOTE.—Laelio-Cattleya Rachel, Manchester, September 2 = L.-C. Ireusis, *Gard. Chron.*, "Hybrid Orchids," August 28, p. 130.

* The name Sylph used previously for C. Mossiae × L.-C. Hippolyta = L.-C. Ceres.

DENDROBIUM HOOKERIANUM.

DENDROBIUM HOOKERIANUM, of which a fine and distinct variety was exhibited by Mr. J. Gurney Fowler at the R.H.S. meeting on the 14th inst., was, as recorded in Veitch's *Orchid Manual*, first discovered by Sir Joseph Hooker in Sikkim, in 1848, growing on trees in hot valleys at an elevation of 1,000 to 5,000 feet above the level of the sea. The species first flowered in this country in the horticultural establishment of Messrs. Brooks and Co., of Manchester, who obtained the R.H.S. first-class Certificate for it in 1870.

This Dendrobe is considered by many as being the finest of all the pendulous habited, yellow blossomed species. The plant produces its flowers on the slender, pendulous growths of the current year, and also on the older leafless ones, the nodes being dark, shining, somewhat thickened and swollen. The racemes generally produce from five to ten flowers, and the individual blooms are considerably over 3 inches across. The flowers resemble those of *D. fimbriatum oculatum*, possessing the dark eye and much fringed lip, but the sepals and petals are longer and more pointed at the ends. The flowers are also very near to those of *D. Harveyanum*, but much larger. Generally this is a difficult plant to cultivate, and quite different in its habit to the majority of Dendrobiums. If grown in moist air and a high temperature, and left to itself it will never make perfect growth, but will keep constantly growing and breaking, and consequently never flowering. To counteract this from March to September the plant should be suspended high up in a shady, well-aired part of the Cattleya house. During the time mentioned the roots should receive an abundance of water, or the tips of the leaves generally go off; later the plant should be rested by keeping the compost dry and the atmosphere cool. *D. Hookerianum* is often known as *D. chrysotis*. W. H. White.

NEW HYBRIDS.

BRASSO-CATTELEYA Olympus (B.-C. Madame Chas. Maron × C. Hardyana). An exceptionally large flower of this fine hybrid, which was raised at Westonbirt, is sent by Mr. H. G. Alexander, Orchid-grower to Sir Geo. L. Holford, K.C.V.O., a great feature being the broad sepals and petals, which are more Cattleya-like than in most other allied hybrids. The flower is 8 inches across the petals, the open lip being over 3 inches wide. The flower is silvery white, with a slight pink tint at the backs of the sepals and the sides of the lip, which has a large, dark orange disc and finely expanded crimped and fringed front.

Laelio-Cattleya Goldstick (C. Dowiana aurea × L.-C. Mrs. R. Measures). This hybrid, which is a worthy addition to the favourite yellow Laelio-Cattleyas with coloured lips, also comes from Mr. Alexander. The sepals and petals are bright yellow, the sepals slightly the

darker. The lip has a yellowish base, and the front lobe and tips of the side lobes are rose-purple. The yellow of *Laelia xanthina*, which with L.-C. elegans produced L.-C. Mrs. R. Measures, strongly asserts itself, but the influence of the other parent shows plainly in the labellum.

THE ROSARY.

YELLOW CLIMBING ROSES.

A. N., who contributes the very interesting articles entitled "Confessions of a Novice," may well ask (p. 130) "What are the best yellow climbing Roses for a light soil?" This is a question of general importance to rosarians, and it would be well if growers gave us their experiences and opinions upon it. In this section of Roses there is an extreme scarcity of varieties.

My experience has been gained with a light soil, and I have been helped very much by using *Rosa laxa* as a stock. Unlike the Briar, *R. laxa* luxuriates in a light, dry soil, and in consequence Roses budded upon it are always satisfactory when grown in soil of this nature. The use of this stock will undoubtedly help A. N. in his difficulty. I know that such advice is contrary to the orthodox belief, but I have had sufficient experience of this stock to justify my assertion.

Golden-yellow Roses are somewhat scarce, and I doubt whether they are yet among the Wichuraiana hybrids. To my mind, Ernest Grandpierre (Weigand, 1900) is still one of the best of the Ramblers, but for some reason or another it is seldom found in catalogues. The obscurity of the raiser has not a little to do with this, and the same cause has been responsible for the belated popularity of many grand Roses which, introduced several years ago, are only becoming known now. Ernest Grandpierre is, I think, as good as any of the newcomers. It is a semi-double variety, but its bunches of yellow flowers are almost the shade of those of the famous old *Perle des Jardins*, from which it is a descendant. I have been told that François Foucard (Barbier, 1901) is the best yellow variety in the Wichuraiana class, but I can give no opinion as I have not grown it.

Passing from the Wichuraiana section, I consider that Billard et Barré (Pernet-Ducher, 1898) is the best climbing yellow Rose for a light soil, especially when worked on *Rosa laxa*. If grown in a sunny situation it is a persistent flowerer, with buds of a superb golden colour when half-expanded. This Rose takes a year or two to establish itself thoroughly and cover a considerable space, but it is worth waiting for. It is a seedling from Alice Furon × Duchesse d'Auerstaedt, the latter a famous old yellow climbing Rose still met with in grand condition in some gardens, and producing flowers of such a rich colour that I am almost tempted to plant it and try it. Billard et Barré, however, may be regarded as one of the best yellow climbing Roses and is thoroughly hardy.

Madame Pierre Cochet (Cochet, 1892) is a climbing Noisette Rose of the richest orange-yellow, and if it finds a congenial situation is indeed worthy of cultivation. I consider it superior to William Allan Richardson, but a fault is that it flowers shyly. I know some rosarians have succeeded with this fine climber, and I still retain the plant in the hope of some day finding suitable surroundings for it. The few flowers I do get are very highly coloured, and I have no doubt growers in a warmer and more genial district than that of my garden will get better results.

I consider Billard et Barré the finest yellow climbing Rose; Climbing Sunburst is a variety of promise, and its merit will be ascertained in a season or two, as it is only of recent introduction. It may come true to colour on a warm wall, and if so it will be a useful acquisition. George M. Taylor, Mid-Lothian.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLVI).

LES VISÉES ALLEMANDES SUR LES PRODUITS HORTICOLES BELGES.

L'ALLEMAGNE importait avant la guerre des quantités considérables de fruits et de légumes. Hambourg était devenu un des grands marchés distributeurs pour les fruits de l'hémisphère sud ainsi que pour les produits des Indes Occidentales et de l'Amérique Centrale. Les Pêches, Poires et Raisins du Cap, les Pommes d'Australie, les Bananes de Jamaïque ou de Costa Rica, les Ananas de St. Michel y ont été à peu près inconnus au cours des derniers mois, n'arrivant qu'en fraude via des pays neutres dont les arrivages étaient sérieusement contrôlés. Les fruits du midi de la France, Cerises, Reines-claude, Poires, y sont plus rares encore; il en sera de même du Chasselas français et des Raisins italiens qui vers le mois d'octobre affluaient sur les grands marchés allemands.

On conçoit dès lors qu'il y ait en Allemagne pénurie de fruits. La production indigène pour l'année serait excellente mais en tout cas insuffisante pour remplacer les envois de l'étranger. De plus, les producteurs rencontrent de grandes difficultés pour opérer la cueillette dans des conditions convenables. Le personnel expérimenté a été appelé sous les armes. Les femmes et les enfants auxquels on a eu recours ne donnent pas satisfaction: les femmes profitent des circonstances pour demander des salaires exorbitants; les enfants jouent et gâtent plus qu'ils ne cueillent. L'emploi des prisonniers de guerre donne lieu à des inconvénients; il faut les loger, les surveiller dans des conditions impossibles pour les petites exploitations. La situation serait telle que malgré le taux des prix dont se plaignent les consommateurs, on est, dans certaines localités, décidé à ne pas faire la cueillette. Pour ce qui concerne les Cerises, des producteurs se sont débarrassés d'une partie de la récolte en autorisant les clients à en cueillir à volonté moyennant une certaine redevance. Cela nous ramène au bon vieux temps où une visite au cerisier était taxée dix centimes.

L'affluence des agents allemands aux marchés de Hollande est plus remarquable que jamais; ils sont preneurs de tout ce qui est offert en vente, à tel point que des représentants de villes néerlandaises ont insisté pour obtenir des prohibitions d'exportation, les classes populaires se trouvant, d'après eux, dans l'impossibilité de se procurer les légumes nécessaires à leur alimentation.

Mais il faut croire que les Allemands fondent de grands espoirs sur la production belge qui, par le fait de l'occupation, se trouve sous leur main. Nous avons donné au printemps des renseignements sur les vus qu'ils nourrissaient en ce qui concerne les Pommes de terre nouvelles de la région malinoise et le *Frankfurter Zeitung* annonce qu'on a pris des mesures pour éviter la répétition des incidents désagréables qui se sont produits lors de l'importation de ces Pommes de terre. Il est facile de se rendre compte de la nature de ces incidents quand on apprend que le gouvernement général de la Belgique a constitué à Bruxelles, avec l'appui de marchands allemands bien connus et bien recommandés, une Centrale de fruits (Obst Zentrale, 54, rue des colonies) qui, après avoir satisfait aux besoins des établissements publics et des Syndicats d'Outre-Rhin, vendra sur les marchés allemands avec un profit équitable mais limité.

Si les intermédiaires se sont rempli les poches au détriment des maraîchers malinois, l'organisation actuelle, en centralisant les achats en Belgique, en supprimant la concurrence, pourra régler

le marché et il y a lieu de se demander si elle le fera dans l'intérêt des producteurs belges. . . . La question se pose d'autant plus que suivant des informations récentes, on s'attend à une interdiction absolue des exportations de fruits et légumes belges vers les pays neutres: toutes les offres d'envois à l'étranger doivent déjà être adressées à l'Obst Zentrale.

Pour faciliter les envois de fruits et légumes vers l'Allemagne, le gouvernement provisoire a, en attendant, pris d'autres mesures qui prouvent "sa sollicitude" à l'égard des populations belges:

Les droits sur les fruits belges à l'entrée en Allemagne, relevés à la suite de la guerre, sont ramenés au tarif minimum.

Les droits d'entrée sur les légumes belges sont abolis.

Les tarifs des transports pour les produits agricoles et horticoles entre la Belgique et l'Allemagne sont abaissés.

Des trains spéciaux seront organisés des principaux centres de production belges pour amener les Pommes de terre, légumes et fruits en Allemagne.

Il s'agit de drainer vers Berlin les produits horticoles qui avant la guerre prenaient le chemin de Londres.

ÉCOLE D'HORTICULTURE DE L'ÉTAT À VILVORDE.

M. ALFRED De COCK, ancien élève de Vilvorde, sergent réformé à la suite de blessures reçues à l'Yser, nous prie d'insérer la communication suivante:

"Nombreux sont les anciens élèves de l'école d'horticulture et d'agriculture de Vilvorde, qui séjournent actuellement sur le sol hospitalier de la grande Angleterre. Pourquoi ne reformerait-on pas 'l'Association des anciens élèves' ici en exil? Ce serait l'occasion d'étendre l'expérience et les connaissances de nos horticulteurs belges."

Pour tout renseignement s'adresser à M. De Cock, Eaton Road, Tarporley, Cheshire.

NOUVELLES DIVERSES.

AU CHAMP D'HONNEUR.—Parmi les pertes récentes subies par l'horticulture française signalons encore celle de MM. Boisard Joseph, architecte-paysagiste (cité à l'ordre du corps d'armée), Cambon, fils du trésorier de la Chambre Syndicale des Fleuristes en boutique de Paris, Cercean, René, de Pierrefitte, Delamarre Camille, d'Épinay sur Seine, Ménard (cité à l'ordre du corps d'armée).

COMMERCE HORTICOLE AVEC LES ÉTATS-UNIS.—Une notice de quarantaine du gouvernement des États-Unis d'Amérique (No. 20 de la série) annonce la prohibition de l'importation des Pins, quelle que soit la variété. Cette mesure est expliquée par la nécessité de prévenir la contamination des cultures américaines par un insecte, l'*Evectria bioniana*.

LA PRODUCTION MARAÎCHÈRE FRANÇAISE.—Comme suite à l'arrêté prohibant l'exportation de certaines catégories de légumes français, mentionnons un avis officiel attirant l'attention des maraîchers sur le débouché important qui est assuré aux gros légumes, tels que Choux, Poireaux, Oignons, Carottes. La demande au front, dans les garnisons et dans les hôpitaux est énorme, les besoins de la population sont aug-

mentés par l'afflux des réfugiés de Belgique et des départements envahis.

L'OIDIUM AMÉRICAIN DU GROSEILLIER EN FRANCE.—Nous avions raison d'appeler l'attention des pépiniéristes français sur l'existence probable d'autres foyers de *Sphaerotheca mors Uvae* (voir *Gard. Chron.* fev. 27, 1915, p. 114). On vient en effet de l'observer chez un horticulteur de la région parisienne. Nous ne pouvons assez conseiller à nos amis français de surveiller les progrès faits par le fléau.

LES PRIMEURS À PARIS EN 1915.—M. J. M. Buisson donne dans la *Revue Horticole*, un aperçu du marché des primeurs au cours de la saison écoulée. La vente a été bonne pour les légumes forcés, exception faite des Asperges qui valaient 30 à 35 pour cent de moins qu'en 1914; les Carottes, Navets et salades ont obtenu un résultat global légèrement supérieur à la moyenne de l'année précédente. La petite production nationale de Chicorée-Witloof a fait des prix doubles, soit 85 à 115 fr. les 100 kilos, grâce à la disparition de l'importation belge. Les cours ont été satisfaisants pour les fruits forcés, qui ont également bénéficié de l'absence de la concurrence belge. Les premiers arrivages ont eu lieu plus tard et en moindre abondance. Le marché a été complètement dépourvu de Raisin pendant un mois, le Chasselas de Thomery ayant fini en mai, et le premier Raisin de serre n'ayant été disponible qu'en juin, lorsqu'il s'est vendu de 12 à 20 francs le kilo; plus tard en juillet, ce prix est tombé à 5 francs.

LA RÉCOLTE DES POMMES À CIDRE EN NORMANDIE.—Nous avons signalé la semaine dernière la visite faite à des fabriques de cidre anglaises par une mission française chargée d'examiner si les fruits des vergers normands pourraient y être vendus. Les producteurs anglais se sont, de leur côté, préoccupés de la question. Ils semblent être arrivés à la conclusion qu'en présence des frais de transport à supporter pour les envois de France, ceux-ci ne pourraient pas, le cas échéant, faire de concurrence.

LA REVUE ALLEMANDE, Mollers' Deutsche Gärtner Zeitung, publie également des listes d'honneur. Son dernier numéro donne une série de seize horticulteurs et jardiniers allemands tués à la guerre. La même revue publie les distinctions reçues par les personnalités horticoles.

KORT OVERZICHT VOOR DE VLAMINGEN.

In Duitschland is een onbetwistbaar gebrek aan fruit en groenten. De belangrijke invoer uit den vreemde ligt teenemaal stil en in 't land zelf heeft men veel moeite met het plukken.

Zulks verklaart dat de Duitschen de hand leggen op de Belgische voortbrengst. In Brussel hebben ze te dien einde een "oofcentrale" ingericht van waar het fruit en de groenten naar 't "Vaterland" zullen gezonden worden.

De inkomrechten op het fruit zijn verminderd, die op de groenten afgeschaft; bijzondere treinen zullen het vervoeren naar Berlijn verzekerden.

M. De Cock richt een oproep tot de oud-leerlingen van Vilvoorde om hier eene afdeling hunner vereniging in te richten.

Uit een verslag over den fruit- en groentenhandel in Parijs blijkt dat de aanvoer in 't voorjaar later en in kleinere hoeveelheden geschiedde. De prijzen waren doorgaans voldoende. Men verwacht binnen kort veel vraag naar gewone groenten, ook zet men de kwekers aan ze in groote hoeveelheid voort te brengen.

NOTES ON CONIFERS.

X.—CUPRESSUS CASHMERIANA.*

This elegant tree, with its remarkably pendulous habit and bluish-green foliage, is certainly the most beautiful of all the Cupresses, but it is, unfortunately, not hardy in our climate, except perhaps in a few favoured spots in the south-west of England and in Ireland. It was formerly considered to be a well-marked variety of the Chinese Cypress (*Cupressus funebris*, Endlicher), described in my last article (*ante* p. 78), but it differs from *C. funebris* in having about ten seeds on each scale of the strobile instead of only three or four; it is probably, therefore, nearly allied to *O. torulosa*, and, indeed, may be a seminal variety of that species.

We have no evidence that *Cupressus cashmeriana* has ever been found in a wild state. There are specimens in the Kew herbarium, collected in Bhutan, by Griffith, and in Sikkim by Hooker; but these are from cultivated trees. Carrière† states that it came from Tibet in 1862, but I have found no specimens nor other evidence to support this statement.

The only specimen of any size in this country is the well-known example in the Temperate House at Kew, which has been cultivated there for some years as *Cupressus funebris* var. *glauca*. This singularly graceful tree, a branch of which is represented in fig. 66, was presented to Kew in 1894 by Mrs. Forster, of Homewood, Chislehurst. The donor received it from Rev. F. Murray, formerly rector of Chislehurst, but beyond this its origin is unknown. Several attempts have been made to raise seedlings from it, but so far without success. It is now about 30 feet high, and would have been much taller, but it had to be topped some years ago, owing to its summit having reached the roof. There is a small tree doing well in the open air at Rostrevor, Ireland, and I have recently seen a small plant in Messrs. Hillier's nursery at Winchester. Sir John Ross informs me that the Rostrevor plant is now about 15 feet high and the stem 15 inches in circumference at about 3 feet from the ground. It was planted in 1898, but has not yet borne cones.

In Northern Italy there are several good specimens, the best of these being a tree of remarkable beauty in front of a villa on the Isola Madre, at Lake Maggiore. It is over 60 feet high, six feet in girth, and its branches cover an area of over 35 paces in circumference. Seedlings from this tree have been raised at Colesbourne, and it has also been propagated by cuttings by Messrs. Rovelli Frères, at Pallanza. A. Bruce Jackson.

FRUIT REGISTER.

THE BLACKBERRY.

It is somewhat surprising that the cultivation and improvement of the Blackberry have never been undertaken commercially to any appreciable extent in this country, more especially as it is one of the easiest and most prolific of fruits to grow. It is not to be recommended that the Blackberry should be grown exclusively, but, in conjunction with the other subjects usually grown on the fruit farm or market garden, it would be found to be a profitable side-line, especially as it grows well in almost all soils and situations that are fairly well exposed to the sun. The plants require training on poles or

wires in the same manner as Raspberries, but with more wires and larger poles to carry the stronger growths. It may be argued that the crop of wild Blackberries is always a large one, but the quality of a cultivated Bramble is different from that of the wildling. At the present time Blackberries are realising from 4d. to 6d. a pound. If packed and marketed in punnets and flat baskets of certain weights, as Raspberries and Strawberries are, the fruits would present a better appearance and also travel well. In the *Rubus* Collection at Kew Gardens the plants have no special treatment, except that they are grown singly, kept clear of weeds, and tied to

DO MENDEL'S LAWS HOLD GOOD FOR CROSSES BETWEEN SPECIES?

UNTIL we arrive at a satisfactory definition of what constitutes a distinct species, it is somewhat difficult to discuss the question of the validity of Mendel's laws in cases of crosses between species; but in the meanwhile it may be of some interest to record a few instances of the results of crosses between plants so different that probably every one would admit them to be distinct specifically. It is probably true that hitherto the vast majority of experiments on Men-



(Photograph by E. J. Wallis.)

FIG. 66.—CUPRESSUS CASHMERIANA, FROM THE TEMPERATE HOUSE, KEW ($\frac{1}{3}$ NAT. SIZE).

tripod poles as required. The ground is a poor sand, and is rarely manured, yet the growth of the plant is healthy and vigorous, and the crop of fruit is a very heavy one. A close inspection of the Blackberries at Kew impresses one with the fact that by a selection of the different varieties it would be possible to have good fruits for at least two months, from the middle of August to the middle of October.

The Blackberry is subject to no insect pests, is not injured by spring frosts, and is not liable to serious fungous diseases, with the rare exception of a trace of mildew occasionally in late autumn. J. C.

delian lines have been made within the species, in the sense that plants have been used of what would usually be called the same species, though differing in some one character. Comparatively little seems to have been done towards the elucidation of the laws that govern the results of crosses between species, perhaps for the very simple reason that many of these hybrids are entirely sterile. However, the cause of this very sterility is another interesting problem, the investigation of which, if it were possible, might lead to important results.

Over and over again I have been struck, when I have seen a new hybrid for the first time, by

* *Cupressus cashmeriana*, Royle ex Carrière, *Conif.*, I., 161 (1867); Elwes and Henry, *Trees of Great Britain and Ireland*, V., 1161 (1910); Clinton-Baker, *Illustr. Conif.*, III., 47 (1913); Bean, *Trees and Shrubs*, I., 443 (1914).

† *Cupressus funebris*, Endlicher, *var. glauca*, Masters, *Kew Hand List Conif.*, 37 (1896).

‡ *Cupressus torulosa*, Don, *var. kashmiriana*, Kent, *Veitch's Man. Conif.*, 234 (1900).

§ *Juniperus* sp., Griffith, *Itin. Notes*, 100, No. 27 (1848).

† *Loc. cit.*

the fact that the characters of neither parent could be said to be dominant over those of the other. It may be, of course, that the characters that I have noticed are not Mendelian pairs, but one would have thought that the presence or absence of a beard in an Iris and the presence or absence of a linear perianth-tube would be examples of such pairs of characters. In each case, however, the hybrid gives a compromise between the characters of the two parents.

It is, of course, not easy to obtain crosses between bearded and non-bearded Irises, and I always remember Sir Michael Foster's answer to my question as to whether he had ever succeeded in obtaining such a hybrid. He took me to see a large clump of a plant which he believed had resulted from the fertilisation of a flower of some form of *I. germanica* with pollen of *I. spuria*. The clump was flowerless, and Foster went on to say: "The only thing that makes me think that something must have happened is that that clump has never flowered though I have had it for many years. No ordinary *germanica* would have remained flowerless for so long."

I therefore tried in another direction, and crossed the only known bearded bulbous Iris, the Portuguese *I. Boissieri*, with pollen of *I. tingitana*, which has no trace of beard. The beard of *I. Boissieri* consists of long, straggling golden hairs $\frac{1}{2}$ to $\frac{1}{4}$ of an inch long. In the hybrid this is reduced to a number of hairs distinctly visible to the naked eye, but less than one-sixteenth of an inch long.

The Evansia section of the Iris family, to which belong the well-known *I. tectorum* and *I. japonica*, is distinguished by the fact that its members have a linear, cockscomb-like crest in place of the beard of the ordinary flag Irises. There has recently been in flower here, together with both its parents, a cross between the crested *I. tectorum* and the bearded Loppio form of *I. Cengialtii*. In this case also the result is a compromise, for a distinct short brownish beard springs from the top of an equally distinct pale-purplish crest. (See *Gard. Chron.*, June 18, 1910, p. 399.)

All the members of the Xiphion section of Irises, except *I. xiphium*, agree in possessing a linear perianth tube between the top of the ovary and the short funnel-shaped base of the flower. In *I. xiphium* I have never seen any trace of this linear tube, nor have I ever found it absent from any of the other species. During the present season there have been in flower here hybrids between *I. xiphium* and *I. tingitana*, and *I. xiphium* and *I. filifolia*. In *I. tingitana* the tube is over an inch in length, and in the hybrid with *I. xiphium* it is about half an inch long, while in the hybrid with *I. filifolia* the half-inch tube of that species is reduced to a short quarter of an inch.

Irises of the sibirica group mostly agree in the possession of hollow stems, a peculiarity not found in any other group. There is one outlying member, *I. Clarkei*, from the Tonglo ridge in the neighbourhood of Darjeeling, which has a solid stem. The stem of *I. sibirica* itself has very thin walls, which are, however, stouter in the case of some of the other species. In *I. chrysographes*, for instance, the central hollow is in diameter only equal to half the diameter of the stem. When *I. Clarkei* is crossed with *I. chrysographes* the resultant plant has stems in which the central hollow is almost but not quite entirely closed with pith—yet another instance of compromise between what seems to be a pair of characters, which might be expected to act according to the Mendelian laws.

The spathe-valves of Irises are of great value in separating the species, and few can have failed to notice the entirely scarious and papery spathes of *I. pallida*, which become entirely dry and white before the buds even appear. Another undoubtedly wild species, *I. variegata*, has entirely herbaceous spathes, which are either wholly green or green flushed with purple. When these two species are crossed—and hybrids

between them exist wild in nature—the resultant plants have spathe-valves which are green in the lower half and scarious in the upper part.

Yet another compromise appeared this year in several batches of hybrids between *I. reticulata* and *I. Bakeriana*. The leaves of the former have four sides with a horny ridge at each angle. The sides are unequal in breadth, two being broad and two narrow, and the two narrow sides come next to each other, between the two broad sides. *I. Bakeriana* is unique in having approximately round leaves with eight projecting ridges set at equal intervals. In the hybrids between *I. reticulata* and *I. Bakeriana* the leaves have six ridges, the extra two appearing down the centre of the broader sides.

The question of the colour pigments of Irises is undoubtedly very intricate and difficult, and colour is notoriously of little value towards the determination of specific rank; but even here a few instances have occurred which show that hybrids between species produce compromises between the parents.

In the so-called sambucina and squalens Irises there is no difficulty in seeing the struggle between the purple of *I. pallida* and the yellow of *I. variegata*. The actual tone and shade depend on the various colour-forms of *I. pallida* and of *I. variegata*, from which the hybrids result, and it is worthy of note that the same murky colouring is present in a hybrid which I raised between the purple *I. trojana* and a form of *I. variegata*.

An even stranger example of the struggle for the mastery between purple and yellow has recently appeared in a hybrid between *I. Boissieri* and *I. juncea*. The unopened bud is brown, a colour resulting from the purple veins that lie close together on a dull yellow-brown ground, produced apparently by purple overlying yellow. The styles are brown and the standards a little more purple than the rest of the flowers.

The brick-red or terra-cotta colour of *I. fulva* has similarly combined with the blue-purple of *I. foliosa* to produce a rich velvety claret-purple in the hybrid between these two closely-allied species.

I. Forrestii, a comparatively new Chinese relative of *I. sibirica*, remains apparently true to the yellow colour, and *I. chrysographes* is equally constantly a magnificent deep violet-purple with a few gold markings at the throat. Hybrids resulting from the crosses made both ways between these species are identical. The purple is lighter in shade and looks as though there is yellow underlying it, while the patch of gold markings at the throat is considerably enlarged.

All these instances seem to show that the law of dominance in the Mendelian sense is by no means universal, and that it does not always occur in crosses between true species.

Another interesting fact is that, with one undoubted exception, *I. chrysographes* × *I. Forrestii*, and the possible exceptions of *I. pallida* × *I. variegata* and *I. fulva* × *I. foliosa*, all the above-mentioned hybrids have proved to be sterile both to their own pollen and to that of both their parents. The two possible exceptions are cases where the parents are somewhat closely allied, while the still more closely related *I. chrysographes* and *I. Forrestii* give hybrids that are readily fertile though their progeny is not yet old enough to flower. From all the many squalens and sambucina forms I have only succeeded in obtaining a few seeds and one seedling from a yellow variety. This recently flowered, and gave a pale lavender self-coloured flower with a large, bright-yellow beard. The spathes were scarious in the upper part and green at the base. The apparent sterility of the other hybrids is extremely provoking, for it would be interesting indeed to discover what the second generation would give from crosses between a bearded and a non-bearded Iris, and between those which possess and those which lack a linear perianth tube. W. R. Dykes, Charterhouse, Godalming.

NEW OR NOTEWORTHY PLANTS.

MESEMBRYANTHEMUM TAYLORI, N. E. BROWN (NEW SPECIES).*

THIS is a distinct species of dwarf habit, which produces its white flowers very freely all the summer. It was sent to me by Mr. E. Taylor, of Southborough, who has had it in cultivation for some time. Its affinities are somewhat obscure, as under the present very badly defined grouping of the species it is difficult to assign it a position.

Plant 3 to 4 inches high, much branched; main branches decumbent, with erect or ascending two-edged branchlets, woody at the base. Leaves ascending or slightly spreading, 4 to $7\frac{1}{2}$ lines long, 2 to $2\frac{1}{2}$ lines thick, straight, sharply three-angled, with the upper surface nearly or quite flat and the sides slightly convex, obtuse, or with a minute apiculus, subrigid and very firm, glabrous and smooth, of a somewhat light green, not dotted nor glaucous. Flowers solitary, terminal, produced freely at the end of every branchlet, sessile between two leaves, about $\frac{3}{4}$ inch in diameter. Calyx usually six-lobed but sometimes five-lobed; lobes unequal, erect, the larger $4\frac{1}{2}$ to 5 lines long, narrowly oblong, obtuse or obliquely acute, glabrous, smooth, green, or with a purplish tint. Petals about 40, in two to three series, ascending—spreading so as to form a funnel-shaped cup, the outer about 5 lines long, $\frac{1}{2}$ to $\frac{3}{4}$ line broad, the inner gradually smaller, all linear, obtuse, entire, milk-white, shining, turning black when faded. Stamens numerous, erect, orange. Stigmas four, much shorter than the stamens, 1 to $1\frac{1}{2}$ line long, erect, tapering from a stout base to a very fine point, pale greenish. A native of South Africa. N. E. Brown.

NOTICES OF BOOKS.

COMPLETION OF GODMAN AND SALVIN'S "BIOLOGIA CENTRALI-AMERICANA."

THE recent appearance of an "Introductory" volume brings to an end this colossal and magnificent work on the natural history of Central America, a work which has been in progress for thirty-five years. Mr. Osbert Salvin died some years ago, but the octogenarian, Dr. F. Ducane Godman, survives to see the completion of his life-long task. It was originally intended to limit the publication to the fauna of the country (Mexico and Central America) in question; but the editors, realising that some account of the flora would greatly increase the interest and value of the work as a whole, especially in relation to geographical distribution, determined on issuing some companion volumes on the vascular plants of the region, though on a less critical and complete plan than those on the zoology, the principal idea being to collect data for intercomparisons. There are five volumes on the botany, which appeared in parts, compiled by W. Botting Hemsley, and published between 1879 and 1888. The compendious "Appendix" and "Introduction" contain copious comparative statistics of the floras of Central America, India and Australia, with other phytogeographical data and a discussion of the same. To the final volume Dr. Hemsley contributes a note of some five pages on the progress of botanical exploration and the course of botanical classification during the last twenty-five years. As we learn from a footnote, a more elaborate treatment of the subject was intended; but a combination of adverse circumstances prevented this from being

* *Meisembryanthemum Taylori*, N. E. Brown. Planta 3-4 poll. alta, ramossissima, basi lignosa. Rami aequaliter. Folia 4-7½ lin. longa, 2-2½ lin. crassa, acute trigona, supra subplana, lateribus leviter convexis, obtusa, interdum minute apiculata, subrigida, glabra, juxta viridia, impunctata, haud glauca. Flores solitariae, terminales, sessiles, lacteae; petala circa 40, subtriseriata, linearia, obtusa; stamina numerosa, erecta, aurantiaca; stigma 4, staminibus breviora, e basi attenuata, pallide viridia. Africa australis

carried out. Dr. Hemsley states that the addition of new species to the Central American flora is enormous, but few new genera have been established on newly discovered types. He estimates that about 2,000 genera of flowering plants are represented by at least 15,000 species. Of special interest is the identification of the Mexican genus *Juliania*, the discovery of additional species, and the foundation of the new family *Julianiaceae* with an outlying member in Peru. Among the numerous botanical discoveries in tropical Africa is an unexpectedly large element of special American affinity. Altogether there are records of the same, or specially representative, genera and species belonging to upwards of sixty families or distinct groups. These facts coupled with the zoo-geographical data and the palaeontology of the region have given rise to the theory of a former land connection between Africa and South America, which has found acceptance both by botanists and zoologists of high repute. Attention is also called to the fact that recent discoveries in China have served to emphasise the close relationships existing between the floras of Eastern Asia and Eastern North America, continued southward into Mexico. *Liriodendron*, *Liquidambar* and *Sassafras* are cited as examples of genera inhabiting the two regions. *Helianthemum*, *Lupinus*, *Heberdenia*, *Platanus* and *Corema* are genera almost confined to America and the Mediterranean region.

THE STUDY OF PLANTS.*

THIS introduction to botany deals more particularly with the physiological side of the science, and contains a large amount of valuable information. It begins with a general account of the parts of the flowering plant, and proceeds to describe the structure and germination of seeds. The work and form of the root is next described, and this is followed by chapters on the shoot, on buds and branches, and on hibernation and movements of plants. The second part is concerned with the biology of the flower, etc., and the third part with systematic botany. So far the book proceeds along the lines familiar in textbooks of botany; but in Part IV.—too short to our thinking—certain of our common trees and shrubs are described. The text concludes with Part V., which deals with ecology. One chapter of some five pages is devoted to the soil, and other chapters to plants of special habitat—hedgerows, walls, woodlands, pastures, meadows, and the like.

The book is well written, and should prove of service to scholars who are preparing for examination in the subject of which it treats.

SCOTLAND.

RAILWAY STATION GARDENS.

THE awards for the best-kept station gardens on the Glasgow and South-Western Railway have just been issued. They are divided into five classes, for which the prizes are respectively £5, £4, £3, £2 and £1.

Those in the first class are as follows:—Southwick, Mr. James Candlish; Dalbeattie, Mr. Thos. Coyle; Carronbridge, Mr. John Rae; Dalmellington, Mr. John Inglis; Clatsburn, Mr. James Houston; Annbank, Mr. Andrew Morren; Moniaive, Mr. G. Macdonald; Rankinston, Mr. Peter Lawson; Glenside, Mr. G. Paterson; Dalrymple, Mr. R. Fisher; and Alloway, Mr. Charles Auld.

IBROX HILL GARDENS, GLASGOW.

THE old walled garden of the mansion of Ibrox Hill, now included in the Bellahouston Park, has been much frequented by the public this summer and autumn. The gardens contain a fine collection of hardy Ferns. Other features are collections of Roses, Fhloxes, Sweet Peas, border flowers and annuals. The new rock garden adjoins the walled garden, and is worth a visit.

* *The Study of Plants.* By T. W. Woodhead, M.Sc. (Oxford: Clarendon Press.) 1915. 6s. 6d.



FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

VINERY.—Early permanent Vines from which the Grapes were cut some time since should be encouraged to ripen their growth, to permit of pruning being done towards the end of next month. In normal seasons no difficulty is experienced in ripening the wood of Vines that have been forced for a number of years, but with younger rods it may be necessary to maintain a little warmth in the water-pipes, particularly during dull, wet weather. As soon as the Vines have cast their foliage they should be pruned. A few young shoots ought to be retained to take the place of some of the older spurs that have become exhausted. When the work of pruning is completed cleanse the house thoroughly, and if insect pests have been troublesome repaint the woodwork. Remove any loose bark from the rods and scrub these latter with a mixture of soft soap and sulphur, to which has been added a small quantity of paraffin. In applying the paraffin mixture take care not to injure the buds. Fork over the borders and remove a little of the surface soil, replacing it with a top-dressing of good loam mixed with wood ashes and Vine manure. When this work has been completed open the house to its fullest extent until the time for starting the Vines. Ripe Grapes in other vineries should be examined frequently for decayed berries and protected from injury by wasps, which are very numerous this season. If it is not possible to exclude these insects from the house by the use of scrim, the bunches should be cut and the stems placed in bottles of water; but this should only be done with mid-season varieties. Should the border need moisture choose a bright day for watering, in order that the atmosphere may become dry again before nightfall.

LATE GRAPES.—In order to preserve these Grapes in good condition during the winter months it is essential that the leaves be kept free from insect pests. Remove all lateral growths and see that the border is in a fairly moist condition. It may be necessary to protect outside borders from excessive moisture, especially in districts where the rainfall is excessive. Sheets of galvanised iron are best for the purpose, and possibly the least objectionable to the eye.

ORCHARD HOUSE.—Examine at once pot trees intended to furnish ripe fruit in May, and repot any that require shifting before they have cast their leaves. It is essential to have the pots scrupulously clean and well drained. Trees that are repotted must be watered with great care, and syringed occasionally on fine days.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD COBY, Esq., Duffryn Gardens, near Cardiff, South-Wales

DELPHINIUM.—When Delphiniums are doing well they are best left alone, but if they have become too large or have exhausted the soil, division and transplanting are necessary. No better time can be chosen for this work than the next ten days or so, for the soil is warm, and the young growths and roots will have a good chance of establishing themselves quickly. Failing the opportunity of transplanting now, the plants must be left until spring, for in no circumstances should Delphiniums be disturbed during late autumn and winter. The site should be so prepared that the plants may have sufficient nourishment to carry them over several years. A rich, deep loam, with heavy dressing of manure, will suit them. They are most effective massed in bold groups in the herbaceous border, but are also good subjects for the wild garden, or for planting in a bed by themselves. Plant firmly and allow a distance of three feet between the plants. Give a good watering to settle the soil, and again later if necessary. Take precautions against slugs during winter by sprinkling finely crushed coke breeze around the clumps.

PAEONIES, PYRETHRUMS AND DORONICUMS.

—The remarks on Delphiniums also apply to Paeonies, Border Pyrethrums, and Doronicums. All these bloom in early summer, and should be lifted, divided, and replanted as soon as possible. The rhizome-like roots of Doronicum should be separated according to size, planting the largest for furnishing the principal display next year, and the smaller in a separate quarter.

IRIS.—It is usually advisable to lift, divide, and transplant Iris germanica and others of the bearded section every three or four years. The roots may be cut or pulled to pieces, according to the number of plants desired, taking care that each piece comprises a bud from which the new plant will arise. This section of the Iris family grows best in an open, sunny position, though in partial shade the plants will also do well, and the blooms keep fresh for a longer period than if exposed to full sunshine. Rich, sandy loam should be provided, and if the soil is deficient in lime, add some finely crushed mortar rubble. Farmyard manure is not needed, but wood ashes and burnt soil are beneficial. In planting, only just cover the root stalk, and give a top-dressing of partly-decayed leaves in winter. Established plants benefit from a dressing of basic slag in winter or early spring. The dwarf forms of bearded Iris flower from March to May, and are followed by the taller I. germanica in May and June. The former are well suited for well-drained positions in the rock garden or as edging or groups in the early hardy border. Iris pumila is among the best, with its varieties I. p. coerulea, Count Andrassy, and Obliensis. Among the taller growers a few popular kinds are I. germanica Thorbeckii, Victorine, Kharput, Madame Chéreau, Queen of May, pallida, and p. dalmatica.

PINKS.—Edgings or clumps of Pinks require dividing and transplanting after three or four years. Choose the best pieces with roots attached, and replant in sandy soil. Where young plants are propagated yearly it may not be necessary to replant the old stock, as better results are obtained from the two-year-old plants raised from cuttings.

BEEDING PLANTS.—Endeavour to keep the flower beds as neat and bright as possible by removing dead and dying leaves and flowers. If all the necessary cuttings of Pelargoniums have not been obtained by this date it will be better to depend on lifting the youngest and best shaped plants later on, but before the severe frost, than to insert further batches of cuttings. Cuttings of Pentstemon, Calceolaria, Antirrhinum, and Viola may still be inserted. In the case of Heliotrope, Lantana, Salvia, Fuchsia, and Verbena cuttings a little bottom heat will now be necessary. A sufficient number of plants of all these should be lifted and potted for stock purposes before the time of frosts.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

GATHERING FRUIT.—Gather all ripe fruit before the autumn gales set in. It is a good plan to go frequently over the trees, gathering at first only the ripest fruit; the size of the rest will improve as the quantity of the fruit on the tree decreases. Do not store the fruit in heaps. Pears should be laid singly on the fruit-room shelves, or in trays, and Apples should not be more than two or three deep. Keep the fruit-room cool and dry.

PREPARATIONS FOR PLANTING.—Preparations should be put in hand for the planting of all kinds of fruit trees next month, or early in November. The nature of the soil, subsoil, and situation must determine what these preparations should be, but they will probably include draining the soil, to carry off superfluous water, and the mixture and pulverisation of the soil itself, especially where the ground is naturally cold or retentive.

WALL TREES.—Now that most of the fruit has been gathered from both Peach and Nectarine trees, superfluous shoots of all kinds should be removed, and the remainder tied or nailed into position. Wall trees ought always, if possible, to be planted early in the autumn. To secure

good trees they should be selected early. At this time of the year there are in most nurseries plenty to choose from; later in the season the choice is not so wide. Soil for renovating borders or making new ones should be collected while in a fairly dry condition, and laid in a heap in a convenient place.

MAIDEN TREES.—Trees of one year from the working with their entire heads are preferred by some to older trees. It is also felt by many gardeners to be an advantage to have had trees under their own care from the beginning, for, failing careful attention for the first three or four years after budding or grafting, a tree may be permanently disfigured. A tree which has been allowed to grow for two seasons after budding or grafting without being headed down will never be so good or shapely as one which was headed back after having grown one year from the working. In the former case, many of the lower shoots will be very weak, by reason of the tree having to support a large head of branches, and if the tree is headed down afterwards, many of the branches are found to be awkwardly placed. If the graft or bud was weak the first year, and on that account left to grow another season, it will do, provided it has grown well the second year, because owing to the weakness of the shoots in the first season the side buds will not have pushed very freely.

TRAINED TREES.—As before remarked, some prefer a one-year-old tree, and some desire those that will bear fruit almost immediately. Trees of this description are plentiful, but the difficulty is to obtain trees that have been moved periodically, and furnished with plenty of uninjured fibrous roots. Whatever size or age the trees may be, they should be furnished with plenty of young wood in every part. This particularly applies to fan-trained Peach and Nectarine trees, for if by reason of injudicious pruning the centres of these trees are destitute of young wood, it is very difficult afterwards to train a sufficient number of suitable shoots. Insist also upon the trees being very carefully lifted, particularly if they have been in training for three or more years. This is a point frequently neglected by those who lift the trees, the roots being often damaged by the spade or injured by being pulled roughly out of the ground. Every care should likewise be taken to prevent injury to the roots or exposure to cold currents of air during transit.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CUCUMBERS.—Cucumbers planted in August with a view to cropping in November and December are growing freely, and, at this stage, the shoots require very careful stopping, thinning, and tying. Never remove a great quantity of foliage at one time, as this would cause a check to the plants at a time when growth is not very vigorous. Stop and tie the shoots twice weekly, so that before the autumn is far advanced the trellis may be well furnished with stocky growth capable of carrying a crop in winter. See that the temperature is not excessively high, and promote a humid atmosphere by syringing the walls and floor of the house. Top-dress the bed when roots appear through the surface with sandy loam mixed with decayed horse manure. A sprinkling of soot will prove advantageous. Ventilate the house carefully, and never with a view to lowering the temperature. If the ventilators are opened a little early in the day, and the amount of fire-heat reduced, an even temperature may easily be maintained. Plants for successive cropping, that is, from January to March, should be planted now, and as the months indicated are the most difficult of the year in which to produce good Cucumbers, the plants should be grown specially for the purpose, and not allowed to fruit for the present. A temperature of 68° at night is suitable. The foliage must not become crowded, as winter Cucumbers need all the light possible. Aim at building up sturdy plants, capable of carrying a crop. All the Year Round and Every Day are good varieties for the purpose.

TOMATOS.—The present is a good time to sow Tomato seeds with a view to producing plants for

fruiting in March and April. Sow the seeds thinly in pans of fine, sifted soil, and germinate them in a temperature of 60°. When the seedlings are well through the soil, they should be placed to within a few inches of the roof-glass and ventilated freely in order to keep them stocky. Repot the plants into three-inch pots as soon as they are large enough for a shift, and water them carefully until they are well rooted. Afford them conditions that favour sturdy growth, and do not subject them to cold draughts. By the beginning of December the plants will be ready for transference to 5-inch pots. Another sowing may be made ten days later, and the seedlings treated in the same manner as above.

WINTER SALADS.—Make preparation at once for a supply of winter salads. Lettuces raised from seeds sown in August should be planted in cold frames or sheltered borders, where they can be protected from frost and heavy rains. The surface of the bed on which the plants are to be grown in frames should be within 15 inches of the roof-glass, and the plants should have plenty of space for the Dutch hoe to be used between them. During mild weather the plants should be fully exposed, but when heavy rains fall the lights should be placed in a position to ward them off, or many of the plants may be lost through damping. Make a sowing of a hardy variety of Lettuce on a sheltered border in ten days' time to produce plants for spring supplies. Maximum, Stanstead Park, Hardy Hammersmith, and Brown Cos are suitable varieties.

MAIN CROP POTATOS should be lifted at once, and stored in a frost-proof shed. The latest batch may be placed in pits where they will keep throughout the winter. While the tubers are being lifted select some for seed purposes and place them singly on shelves or trays in a well-ventilated shed for the winter.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

THUNIA.—The plants have ripened their pseudo-bulbs, and if the foliage has fallen, the pots may be placed on a shelf or in a similar position, and the plants allowed a prolonged rest. During this period no water need be given, and the temperature should not fall below 50°.

ONCIDIUM.—*Oncidium ornithorhynchum* will soon be in bloom; after flowering the plants should be allowed to rest, affording sufficient water only to keep the pseudo-bulbs plump. *O. varicosum* and a few other species are completing their growth, and will soon be producing flower-scapes. Ample light and ventilation must be allowed to consolidate the new pseudo-bulbs.

VANDA AND AERIDES.—Water should gradually be withheld from *Vandas* and *Aerides* as the season's growth finishes.

CATTLEYA ELDOORADO and its variety *Wallisii* will soon be in bloom. Immediately the flowers have passed, repotting can be done. This plant is often cultivated with Mexican Orchids, but it will succeed among other *Cattleyas* equally well, provided it is grown in a light position. Newly potted plants must not be over-watered, or the young roots will fail to enter the compost.

SEEDLINGS.—*Cypripediums* grow very rapidly if given generous treatment, and attention is paid to repotting. The present is a very good time to repot any which require it. With the advent of cooler weather and dewy nights, the work of repotting *Odontoglossums* may be proceeded with. An average temperature of 60° should be maintained, and the atmosphere kept fairly moist, while a little shade will be needed for a few hours each day in bright weather. Water carefully, using a fine sprayer or syringe. The preparation of store pots and the compost was described in the calendar for March 27. A few seedling *Cattleyas* may require repotting, but this should not be done unless new roots are appearing at the base of the current growth. Large plants approaching the flowering stage may be arranged together, where they will be exposed to a little

extra light, a remark which applies equally to *Brassavola* hybrids. Smaller seedlings must be repotted as they fill their receptacles with roots, and others may be picked off as they become large enough for removal. Watch for insect pests, especially thrips, and, as prevention is better than cure, vaporise the houses at intervals of a fortnight.

GENERAL REMARKS.—*Cattleyas* and *Dendrobiums* have benefited by the fine weather, and from now onwards it is advisable to expose the plants to full sunshine if this can be done without scorching the foliage. *Dendrobiums* must be examined occasionally to ascertain their condition of growth, and those that have completed their new pseudo-bulbs may be placed in a house where the atmosphere is less moist. The terminal leaf should appear before the resting season begins. When the plants are removed from their growing quarters, care will be necessary to prevent their suffering from drought. The lessening of the water supply must be done gradually, and at no time should the pseudo-bulbs become shrivelled from lack of moisture. *D. Phalaenopsis* and *D. formosum giganteum* are sending up flower-scapes; when the blooms begin to expand the immediate surroundings should be kept drier, but the temperature must not fall below 60° F. Many of the late autumn and winter flowering *Cypripediums* are showing signs of blooming, and the stems should be staked neatly. Grow the plants near the roof-glass and give the roots copious supplies of water whenever they need moisture. Pot-bound specimens, particularly those belonging to the insigne group, may be watered on alternate occasions with weak liquid manure, but feeding should cease directly the blooms begin to open. Encourage growing plants to complete their pseudo-bulbs before the dull weather arrives. To this end the temperatures in the various houses must be maintained, all the light possible admitted, and the ventilators opened more or less according to the weather. The amount of atmospheric moisture must be reduced gradually, and the damping should be regulated according to the locality. Watering will require more attention than hitherto, and each plant will need individual attention in this respect.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

SOUVENIR DE LA MAISON CARNATIONS.—The earliest rooted layers which have been potted for some time are well established. Less shade and more ventilation should be afforded them, for these Carnations must be grown sturdily, or rust and other diseases will soon attack them. Water the roots carefully and keep the atmosphere as dry as possible. Repot later plants and treat them as is usual with repotted plants until well established.

VIOLETS.—If the runners are not already planted in frames let them be planted at once. When this has been done, water the bed to settle the soil well about the roots, keep the frame rather close, and shade the glass for a few days until the roots have recovered from the disturbance. Later the lights should remain off until frosts threaten. Select a few well-grown plants and shift them into 5 or 6-inch pots according to their size. These plants should be grown in a cold frame and gradually inured to full exposure until it becomes necessary to take them indoors. Arrange them in a light position near the roof-glass in a cool house and employ only a little fire-heat. During the winter pinch back all runners to the crowns, persistently pinching to favour the production of good blooms.

AZALEAS.—These plants are not harmed by a little cold, but where the practice of standing them out-of-doors is followed it is time to prepare the houses ready for receiving them. Previous to taking them indoors see if any trace of thrips is present, and, if found, syringe the plants well with an insecticide. If the plants have been infested with these pests during the summer syringe them on several occasions at short intervals to kill the eggs.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would oblige by delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPTEMBER 28—

Roy. Hort. Soc. Coms. meet. Vegetable Show (Lecture at 3 p.m. on "Early Flowering Chrysanthemums," by Mr. Robert Fife).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 54.5.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, September 23 (10 a.m.): Bar., 29.5. Temp., 68°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 10.30.

MONDAY AND WEDNESDAY—

Bulbs, Bay Trees, Perennials, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.

WEDNESDAY—

Trade sale of Bulbs, Palms, etc., by Protheroe and Morris, at 1.

WEDNESDAY, THURSDAY, FRIDAY AND

SATURDAY—

Nursery Stock at the American Nurseries, Bagshot, by order of Messrs. John Waterer, Sons and Crisp, by Protheroe and Morris, at 12.

Sander's List of Orchid Hybrids.

The new edition of *Sander's List of Orchid Hybrids*, already noticed briefly in our

issue of September 4, is not only valuable for the new records which it contains, but also as a summary of the remarkable progress which has been made in the production of new varieties. Although the Orchid-grower meets with peculiar difficulties in the raising and cultivation of this remarkable group of plants, he is in one respect more fortunate than those who deal with the more humdrum members of the plant world. For among the Orchids only, a fertile anarchy seems to reign; whereas the great majority of other families of plants have settled down to an exclusiveness and regularity which prevent them from crossing with other allied species. It is true that this is by no means a fixed rule, and it is possible that in the future many more exceptions to it may be discovered. But in the Orchids the exceptions are the rules, and, indeed, not only do species cross freely with species of the same genus, but genera which systematists separate widely, are

also fertile when crossed with one another. Thus the number of permutations and combinations of form and colour is almost endless. For example, the present edition of the *List of Orchid Hybrids* enumerates about 100 distinct combinations under Brasso-Cattleya, 20 under Brasso-Laelia, and 57 under Brasso-Laelio-Cattleya. The *Cypripediums* require some 26 pages, each of which enumerates over 60 distinct named crosses; Cattleya fills 7 pages, and Laelio-Cattleya 14 pages, each containing about the same number of names. *Odontioda*, which only made its debut in 1904, now includes over 150 named hybrids, and the *Odontoglossums*, represented in gardens a decade ago only by the introduction of natural hybrids and a few home-raised seedlings, date their active exploitation from 1902, when the many blotched forms of *O. ardentissimum* appeared. Now the list shows that over 400 distinct crosses have flowered: *Sophro-Cattleya* number 30; *Sophro-Laelia*, 13; *Sophro-Laelio-Cattleya*, 50; and so on. Inspection of Table 2 proves, as is to be expected, that the most showy plants have been most used in crossing. Thus, *Cattleya Dowiana* has been a great favourite, and has entered into the composition of over 135 hybrids, and, indirectly, through *C. Hardyana*, into over 50, and yet more remotely through its hybrids into many other productions.

Not only is this book invaluable for reference, but it provides the student and the hybridist with valuable suggestions for further experiment. In particular, as the book discloses, in spite of the careful and systematic recording practised by so many Orchidists, more pertaining to the origin of hybrids would be known had the raisers been more careful or more communicative. It is greatly to be hoped, in the interest of science, that the breeders of the future, whilst attending no less to success than those of the past, may be yet more punctilious in placing on record the provenance of the new plants which they raise.

Of the interesting points which suggest themselves from a perusal of these pages, we may cite the evidence that reverse crosses of certain species appear to give very different results, according to the way in which the cross is made. To cite a case in point, we may mention *Cattleya Fabia* (see *Gard. Chron.*, Feb. 22, 1913, p. 114), where a dark-coloured *Cattleya* was pollinated with pollen of *C. Dowiana aurea*. The result was a batch of seedlings with white sepals and petals. In the same note it is mentioned that the very dark and brilliant colour of *C. Fabia* varieties raised by Mr. Alexander for Sir George Holford, and the dark *Vigeriana* forms of *M. Maron*, were from the light yellow petalled *C. Dowiana aurea* crossed with dark *C. labiata*. The yellow on the rose-purple seems to have driven the latter colour out, whilst the rose-purple on the yellow intensified the dark tint. Similar results have been obtained with crosses between *C. Dowiana aurea* and *C. Trianae*, and in other

crosses where yellow is in one of the parents. If this be a fact, and if it be a constant fact, it should be useful for the guidance of the hybridist. Another point is whether the colour of the labellum is transmitted in offspring only to that part or may it influence the colour of the other perianth segments. There is much evidence to show that the labellum maintains its individuality, but we cannot say that the evidence is complete. For example, in the many cases of *peloria*, the petals often show the same colouring as the lip, as, for instance, in *Dendrobium nobile* *Cooksonianum*. In *Dendrobium nobile* *Burford* variety we get a step further, the colour of the labellum being carried into the outer whorl and the three sepals marked with the dark purple of the lip.

In other cases, similar facts have been noted; both the purple of the lip in *C. Trianae* and the yellow of its disc having appeared in several instances on the other segments. With various hybrids the intensity of colour can only be traced to the labellum of one of the parents; a significant instance being the *Oakwood Ruby* set of *Calanthe* hybrids raised by the late Mr. N. C. Cookson between the pink *Calanthe Sedenii* or its white forms, *Alexanderi* and *Harrisii*, and the white *C. vestita rubro-oculata*, which has a deep ruby-red blotch at the base of the lip. By following up the cross the ruby-red blotch coloured the whole of the flower in the *Oakwood Ruby*, except for a small white spot on the labellum. *Sophro-Cattleya Sylvia* (*S.-C. Doris* × *C. Hardyana*), shown by Mr. J. Gurney Fowler at the meeting of the Royal Horticultural Society on August 31, is another fine example of colour diffusion of the labellum. The factors concerned are *Sophronitis grandiflora*, light scarlet, *Cattleya Warszewiczii*, rose sepals and petals, and twice *Cattleya Dowiana aurea* with light-yellowish sepals and petals and dark claret-purple lip. The result is a hybrid entirely of a deep vinous purple colour with ruby-red shade.

With the large accumulation of known facts such as these, the art of Orchid-breeding may be said already to have passed out from its merely empirical stage, and those who practise it will prove the more successful, the more they work along the plan of Nature as disclosed by past experience. Examination of the larger successes indicates where such knowledge may assist. Thus among the large number of *Brasso-Cattleyas* there is still room for new colour introduction. They provide beautiful models, but lack brightness of tint; good clear yellow, and purple and crimson tints are among those most to be desired. Again, in the general quest for novelty, there is a tendency to include certain primary types of form and colour rather than to enlarge and improve them. *Sophronitis* and *Cochlioda Nozliana* crosses may be mentioned. The general recommendation to the hybridist of both these was their scarlet colour, and when happily used they gave good results in scarlet and red flowers. But when crossed again with *Cattleya* and *Laelia* in the

* New issue of *Sander's List of Orchid Hybrids*, containing all the known Orchids of hybrid origin, their synonyms and parentage. (Sander and Sons, St. Albans.) Price one guinea.

case of *Sophranitis*, and with *Odontoglossum* in the case of *Cochlioda*, although the seedlings are pretty, they often compare in the former case only with indifferent *Laelio-Cattleyas*, and in the latter with ordinary *Odontoglossums*.

A question of some importance, relating to nomenclature, deserves also a word of comment, and this question is best illustrated by an example. Take a *Laelio-Cattleya*, and cross it and its progeny two or three times successively with *Cattleya*, and the pollinia (four developed) show the *Cattleya* character. But let the same *Laelio-Cattleya* be crossed with *Laelia* in the same way, and the pollinia developed eight show *Laelia*. And yet in both cases the hybrid list would place them under *Laelio-Cattleya*, and for garden purposes excusably, for there are still the two elements, although in varying degree, and so also

doubt plays a great part. In the hybrid, especially in "wide crosses," every part of the resultant root, leaf and flower has to be modified, as in building a new structure out of the remains of several others, and it is wonderful how it is accomplished. For example, when a species with a strongly filamentose labellum is crossed with one having a more entire and membranous lip, in the resulting hybrid the evidence of the filaments of the lip of the one, although the intervening spaces are filled up web-like, can easily be seen by holding the flower up to a strong light, the points appearing fringe-like at the margin, as noted under *Epi-Laelia Medusae* (see *Gardeners' Chronicle*, March 28, 1914).

It is this struggle between dissimilar structures in complex hybrids compelling them, as it were, to go back and make a fresh start, that probably accounts for

PEAR LAXTON'S SUPERB.—The Pear illustrated in fig. 67 is a new variety, raised by Messrs. LAXTON BROS. from Williams' Bon Chrétien and Beurré Superfin. The fruits are of medium size, with greenish-yellow skin flushed with red on the side next to the sun. The white flesh is juicy and of excellent flavour. The quality of earliness is of great value, and this, combined with an attractive appearance, should make the variety popular in gardens. Specimens were exhibited at the R.H.S. meeting on August 31, when the Fruit and Vegetable Committee granted the variety the Award of Merit.

WAR HORTICULTURAL RELIEF FUND.—The Lady Mayoress of Colchester has forwarded a cheque for £53 12s. 11d. for the War Horticultural Relief Fund to be earmarked for Serbia. This sum is 25 per cent. of the collections made on the Colchester Serbian Flag Day and at the Colchester Rose and Horticultural Society's Show on September 8.

ROYAL BOTANIC SOCIETY.—We are informed by the Royal Botanic Society that three lectures by Professor W. B. BOTTOMLEY, entitled

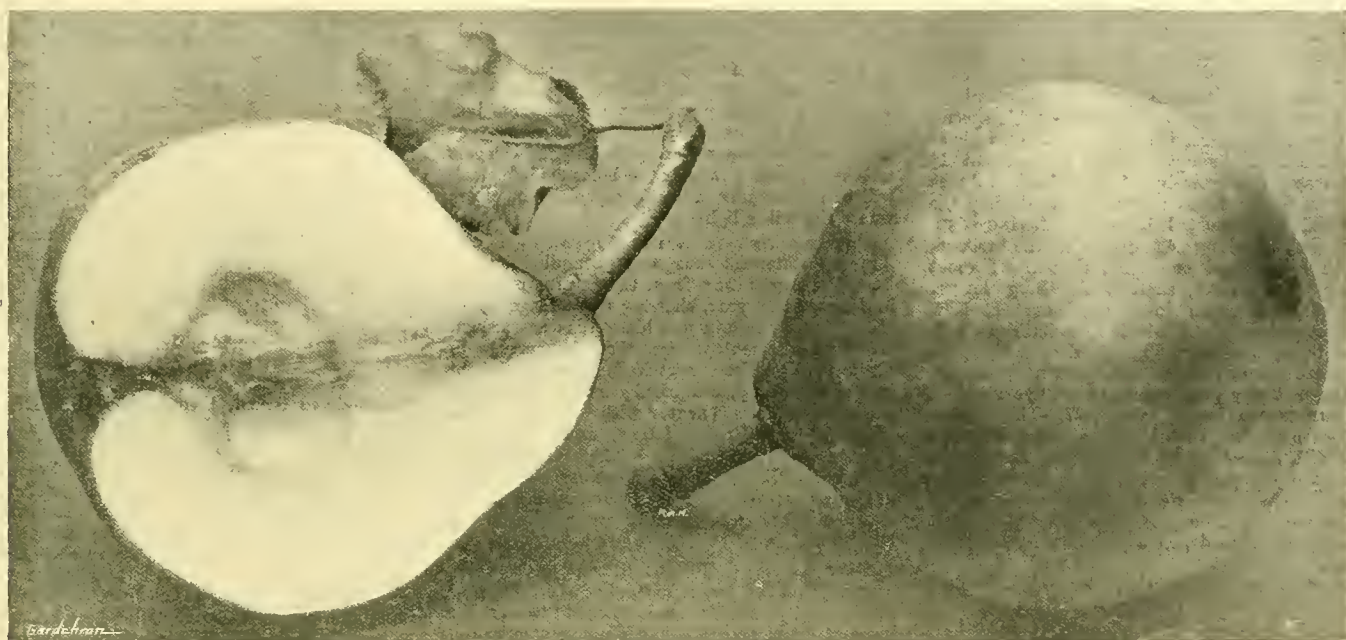


FIG. 67.—PEAR LAXTON'S SUPERB (WILLIAMS' BON CHRÉTIEN × BEURRÉ SUPERFIN).
(R.H.S. Award of Merit, August 21, 1915.)

with the *Odontioda*-*Odontoglossum*, and others.

A present danger, and one which it is of the highest importance to minimise, is the risk of losing primary types of colour and form, by merging them in the sea of future experiment. The aims should be to preserve the scarlet of *Sophranitis grandiflora* and of *Cochlioda Noezliana* in races of improved size and shape, and this is most likely to be done by repeatedly bringing back the straying hybrids to the original species for renovation, crosses being made both ways, and the results carefully noted.

There is no doubt that occasional use of species in hybridising Orchids tends to stability of character. In complex hybrids reversion and progression are doubtless ruled by some natural means, not understandable at present, but in which the struggle between the conflicting elements, structural and cellular, in the parents no

the prevalence of bad forms among them. Where such disappointing batches appear with occasional good forms, the good flower should be crossed with a fine species in preference to using another hybrid.

So far, and probably in the future, the aim of the hybridist will be to have large and richly-coloured flowers, but to those who take pleasure in nature the less showy varieties will give satisfaction, and some day we hope we shall hear of an enthusiast who loves the pretty *Bulbophyllums*, *Cirrhopetalums*, and similar genera, and who will endeavour to raise from them even more graceful forms and yet quainter colours.

The Orchids, in spite of the vast amount of pains bestowed upon them, still hold big prizes for the hybridist who will combine boldness with shrewdness, who possesses a genius for patience, and whose mind is stimulated and not depressed by inevitable failures.

"The Wonder-Workers of the Soil," will be delivered on October 4, 11, 18. A course of six lecture demonstrations in practical gardening, given by Miss HELEN COLT on Saturday mornings, commenced on September 18.

HORTICULTURAL DIRECTORY FOR 1916.—We are desired by the editor of this work to ask head gardeners if they will kindly inform him at 10, Essex Street, Strand, of any change of proprietorship or address that may have occurred since the 1915 edition was published.

AN ONION COMPETITION.—An Onion competition, instituted by Messrs. J. C. WHEELER AND SON, Gloucester, took place on the 15th inst. at Gloucester. The firm offered prizes for the best bulbs of the variety *New Mammoth*, and the 1st prize was won by Mr. JOHN H. CROXFORD, Osric, Tuffley, the 2nd by Mr. H. TYSON, The Lodge Gardens, Bedford, and the 3rd by Mr. THOMAS HALFORD, Castle Hill, Buckland Newton.

WAR ITEMS.—We have already referred to the loss sustained by M. PERNET DUCHER, the eminent French rosarian of Lyons, whose son CLAUDE was killed earlier in the war. Readers

will now regret to learn that his son GEORGES has also met with his death at the front.

— M. JULES GRAVIEREAUX, president of the Rose Committee of the National Horticultural Society of France, has just published an album of his rosary at L'Hay. The receipts from the sale of this work will be given towards the erection of a monument in honour of the young men of L'Hay who have been killed in the war.

"BOTANICAL MAGAZINE."—The following plants are illustrated and described in the September issue of this publication:—

POPULUS LASIOCARPA, tab. 8.625.—This Poplar has attracted much notice at the R.H.S. meetings on the several occasions when specimens have been exhibited, by reason of its handsome, cordate leaves, for, as stated in *Bot. Mag.*, as regards size of leaf *Populus lasiocarpa* is undoubtedly the finest of all the Poplars of which we have knowledge. Mr. BEAN, in *Trees and Shrubs Hardy in the British Isles*, states that he gathered a leaf in Messrs. J. VEITCH AND SONS' nursery at Coombe Wood with blade measuring 14 inches long by 9 inches wide. The species was first discovered growing wild in China by Professor A. HENRY in 1888, but it was not introduced into this country until 1900, when Mr. E. H. WILSON collected it on behalf of Messrs. J. VEITCH AND SONS. The tree grows 40 to 60 feet high, and, like most Poplars, does best when the roots are growing in moist soil.

GLADIOLUS MELLERT, tab. 8.626.—This species of *Gladiolus* has reddish-coloured blooms about $\frac{2}{3}$ inch broad, the upper petals being about $\frac{1}{2}$ inch long. It is a native of Nyasaland, and was discovered so long ago as 1861, during the Zambesi expedition, led by Dr. LIVINGSTONE. The distinguishing character is the foliage, which consists of one long, rigid leaf, about which are several shorter, sheathing leaves. The plant is grown in a greenhouse at Kew with other species of *Gladiolus*, and thrives well in ordinary treatment, but it does not appear to possess much value for garden purposes, although it may prove useful to the hybridist.

ORNITHOBOLA LACEI, tab. 8.627.—This Gesneraceous plant has bilabiate flowers of a shade of lilac with deeper coloured blotches. The foliage is usually unequal-sized, but in the main the leaves are ovate-cordate with prominent nerving, as is common amongst gesnerads. The plate does not seem to depict a plant of much garden value.

METEROSIDEROS DIFFUSA, tab. 8.628.—Like many of the other "Bottle-brush" plants, this species is a native of New Zealand, its habitat being restricted to North Island. We are indebted to Captain A. A. DORRIEN-SMITH, who grows the plant in his garden at Trecco Abbey, Scilly, for its introduction to this country. The species forms a shrub, bearing small, oblong, coriaceous leaves and bunches of vinous-red flowers with the usual numerous stamens, that give the bottle-brush appearance, although the filaments are not so conspicuous a character as in the better-known *M. floribunda*.

POTATO DISEASE.—The Board of Agriculture and Fisheries report that Potato disease (*Phytophthora infestans*) has largely destroyed the haulm of Potato crops in many parts of the country. In view, however, of the drier weather of the past few weeks it is probable that, as yet, relatively few tubers have been attacked, and consequently that the immediate removal of diseased haulm would minimise risk of infection. As a further precaution, however, all Potato crops should be lifted as soon as possible. It has been demonstrated repeatedly that even with varieties subject to disease, comparatively healthy crops can be obtained if the tubers are lifted as soon as the haulm has died down. Apart from the risk of attack by this disease, tubers left in heavy or water-logged soil are liable to suffer from lack of air, with the result that they rot quickly, either in the soil or subsequently in the clamp. It is essential for good

keeping that the tubers should be stored clean and dry, with their vitality unimpaired. In a dry, well-ventilated clamp, disease does not spread rapidly, although dead or diseased tubers generally rot. On the other hand, if the clamp is moist or badly ventilated, spores from diseased tubers may infect healthy ones. All diseased and damaged tubers should be excluded from the clamp. Those least affected could be boiled and fed to pigs. The clamp should be made as narrow as practicable and should be covered to a depth of about 6 inches with a layer of stout straw through which air can circulate freely; a thin layer of soil, sufficient to keep the straw in position, should be put on, followed by a thicker covering in November to keep out frost. The crest of the clamp must be freely ventilated. It is advisable to store seed tubers in boxes or small lots, and not to mix them with the "ware." In the event, however, of much disease, a change of seed from a healthy crop should be obtained for planting next season.

POTASH AS A FERTILISER.—At this time of year, when garden rubbish accumulates very rapidly, the refuse heap can be turned to good account in producing potash—one of the most valuable of manurial agents for the soil. Every kind of garden rubbish can be easily burned if the fire be started with dry material, and can be kept burning for weeks by the gradual addition of green twigs and leaves. Potash in its commercial form is practicably unobtainable just now, owing to the shutting off of German supplies; organic manures are also dear and difficult to obtain, and a supply of home-made potash will be increasingly valuable, especially in places where the soil is light.

ACREAGE OF HOPS IN ENGLAND.—A preliminary statement has been compiled by the Board of Agriculture from the returns collected in June of this year, showing the acreage under Hops in each county in which Hops are grown. By this statement we see that the acreage in Kent (as would be expected) far exceeds that of any other county, comprising over 21,000 acres. Hereford comes next, with 5,400 acres. Worcester and Sussex follow, each having an acreage of nearly 3,000. The corresponding acreage in 1914 is given for comparison, and in almost every case there is a decrease—in the case of Kent of over a thousand acres, and in Sussex and Worcester of several hundred.

BRACKEN AS A USEFUL PLANT.—There are thousands of acres in this country where Bracken grows in profusion and the Fern can be had for the cutting, being generally regarded as a nuisance. Except in a few instances Bracken is only used for litter or for packing goods for transit, and nearly all of it is allowed to rot where it lies. It is obvious at a time like the present, when straw is so dear that it should be used as fodder rather than as litter, that Bracken could well be used for farm purposes. Farmers who keep cows and pigs could make tons of manure at a very small cost by using Fern instead of straw, and Bracken manure contains far greater fertilising properties than that of which moss-litter is the staple. The Bracken should be cut in the green state, otherwise the stems are too hard to make an ideal bed for cattle. If it be cut and stacked dry during the summer the younger growths will be picked out by cattle, but by September it is too tough to eat. In wet weather Bracken can be treated on the ensilage system, exactly in the same manner as hay. It may not be generally known that the rhizomes of Bracken are wholesome food for human beings. They should be roasted over a fire until the outer skin is charred, when the fibres can be separated by beating. The starchy substance that remains tastes much like Oat cake, but possesses a slight astringency. The young fronds of Bracken, which appear early in the year, can be prepared like Asparagus. They are thus eaten in Japan, though the astringency of this part of the plant is rather too pronounced to be agreeable. The

agricultural possibilities of the Fern are, however, undoubted, and should be much more widely known.

THE CHEMICAL FACTOR IN PLANTS.—Mr. H. G. SMITH, the actual president of the Royal Society of New South Wales, well known for his phyto-chemical investigations, mainly in association with Mr. R. T. BAKER, made phyto-chemistry the principal theme of his presidential address, now reported in the XLVIIIth volume of the society's journal. He reviews the results of their joint labours, including the investigations of about 160 distinct species of *Eucalyptus* and practically the whole of the Australian coniferae. He insists on the value of chemical characters, correlated with morphological peculiarities, in the definition and circumscription of species. In illustration of this claim he cites the case of *Melaleuca genistifolia* and *M. bracteata*, regarded by some botanists as conspecific, although presenting certain morphological differences. He states that chemical evidence is conclusive that the two trees are quite distinct. The essential oils obtained from the leaves by steam distillation are alone sufficient to determine the point; that from *M. genistifolia* has no possible commercial value, as it consists very largely of pinene, and does not appear to contain in any degree the characteristic constituent of the oil of *M. bracteata*, which consists largely of methyl-eugenol. The yield from *M. bracteata* is about 1 per cent., so that it produces an oil containing methyl-eugenol in larger amount than is obtainable from the leaves of any other known plant. This difference in chemical constituents holds good for specimens from localities hundreds of miles apart. Should it ever be desirable to cultivate *M. bracteata* for its oil care would have to be exercised to exclude the very similar *M. genistifolia*. In this connection it may be mentioned that closely allied species of *Sapium* yield rubbers of the highest and lowest qualities.

DESTRUCTION OF FLY LARVAE IN HORSE MANURE.—Messrs. CLOK, HUTCHISON and SCALES have issued, through the U.S. Department of Agriculture, a further bulletin (No. 245) of their experiments in the use of divers substances in destroying the larvae of flies. Our readers will remember that in their earlier report (Bulletin No. 118, U.S. Department of Agriculture) they recommended for this purpose the use of borax applied at the rate of .62 lb. per 8 bushels or 10 cubic feet of manure. Although it is claimed that manure treated in this manner may be applied to the land at the rate of 15 tons to the acre without injury to vegetation, the authors recognise that there is a risk to crops if larger quantities of borax are added. They have, therefore, sought to discover other substances which, whilst not open to this objection, may be used to destroy the larvae of flies. At the same time the authors repeat their recommendation of the use of borax for the treatment of outhouses, refuse heaps, and similar places in which flies deposit their eggs. Of various substances experimented with some, though effective, are too expensive for use on manure heaps; but they find in powdered Hellebore (*Veratrum album* and *V. viride*) a substance harmless to plants (and also to chickens) and destructive of fly larvae. The cost at the present price of Hellebore powder is not prohibitive: in America it is 0.69 cent per bushel of manure; but it is to be feared that with a general demand for this substance the price would advance. Furthermore, it is doubtful whether the present stocks of Hellebore would suffice to meet a widespread demand. It is also to be noted that Hellebore as we know it is the powdered root of *Helleborus niger*, and that this plant, which is not a commercial product in the United States, was not tested. On general grounds, however, it is probable that European Hellebore would be no less efficacious than the spurious Hellebore, *Veratrum viride* (Swamp Hellebore), on which the American experiments

were made. It is, however, to be desired that experiments should be made with the powdered root of *Helleborus niger*. The authors recommend that the powdered Hellebore be mixed with water at the rate of one-half pound to 10 gallons, the mixture stirred, and allowed to stand in a barrel for several hours, and sprinkled on the manure heap at the rate of 10 gallons to 8 bushels of manure, paying particular attention to the edges of the heap. A rough estimate of the amount to use per day may be made by reckoning that 2 bushels of manure per horse—a liberal estimate—is the daily output.

POTATO DISEASE SEVENTY YEARS AGO.—Some inquiry has been made as to the probable advantage of dusting Potatoes with slaked lime when they are pitted. It may be well to try the experiment, but we do not see what the lime is to do beyond drying somewhat the surface of the tubers. Another important question is whether applications of salt, either naturally as from the vicinity of the ocean, or artificially as in manure, have had any tendency to keep the murrain off. We alluded to this matter last week, and then asked for information. It then appeared that two independent observers, one in England and the other in Flanders, had remarked that Potato fields near the sea were unaffected. A correspondent has since directed our attention to a statement in one of the daily papers that the crop is entirely free from disease wherever seaweed has been used for manure. Is this true? Our Isle of Thanet friends can easily answer that question. In the meanwhile Mr. Ives, of Goldhill, near Gerrard's Cross, Bucks, informs us that last winter he sowed about 2 cwt. of salt to the acre on his field and afterwards chalked it. This field early in the spring was planted with Potatoes, four or five sorts, and the result has been that while his neighbours have lost more than half their Potatoes from the fatal disease, his Potatoes have in a great measure escaped. He adds that the haulm is seized, and he had feared at one time that he should lose his crop, yet very few of the tubers are yet affected. He has taken up forty bushels without a peck of bad ones. He attributes his success to the use of chalk and salt, the one absorbing the wet, and the other acting as a preservative against the infection. He has $3\frac{1}{2}$ acres. He is of opinion that if he had sowed more salt he should have had a better crop still. His soil is a sharp gravel. *Extract from the Gardeners' Chronicle, September 27, 1845.*

MOSSES IN THE STOMACH OF A MAMMOTH.—The extraordinary state of preservation of a mammoth discovered in the Liakhov islands has made possible the identification of three species of moss found in the stomach contents of the animal. The material available, a greenish-grey moss of about one cubic centimetre, was formed mainly of vegetable fragments. Apart from mosses, this was almost wholly composed of the elements of monocotyledonous plants. The fragments of mosses allowed the presence of *Polytrichum sexangulare*, *Hypnum revolvens*, and *H. stellatum* to be recognised with certainty. These three species form part of the present flora of Siberia. The two latter are still found there beyond latitude 71° ; the first-named occurs in Kamtschatka. The two *Hypnums* are also dispersed over the temperate region, but *Polytrichum sexangulare* is found in these lower latitudes only at high elevations on mountains. The occurrence together of these three species indicates the prevalence of a very cold climate when they were ingested. It is not considered that the moss formed a part of the food, but that it was swallowed accidentally when the animal was browsing on more succulent and nutritive fodder. These mosses have very little value as food. At the present time, tufts of *Polytrichum* and *Hypnum* are browsed by deer, but only because they grow among various grasses, and are accidentally swallowed therewith when the animals are grazing on the latter.

TREES AND SHRUBS.

LARGE TREES IN THE UNITED STATES.

THE American Genetic Association last year offered prizes for photographs and particulars of the largest broad-leaf trees now living in the United States. A very readable account of the results of this competition, with illustrations of the finest specimens reported, appears in the *Washington Journal of Heredity* for September, 1915. What seems to be the largest tree known in the States, Conifers being excluded, is a magnificent specimen of the American Plane (*Platanus occidentalis*), growing on rich alluvial soil on the White River at Worthington, Indiana. This measures 42 feet in girth at 5 feet above the ground, dividing at about 12 feet up into two stems, 27 feet 8 inches and 23 feet 2 inches in girth, the total height being estimated at 150 feet. In the same district a tree of this species, over 67 feet in girth, was cut down some time before 1864, and is claimed to have been the largest tree ever grown in the United States east of the Yosemite Valley.

The tallest broad-leaf tree reported is a fine Tulip tree (*Liriodendron tulipifera*), growing on Reems Creek, about seventeen miles from Asheville, North Carolina. It is stated to be 198 feet high, with a girth of $34\frac{1}{2}$ feet at 4 feet above the ground. This surpasses any previous records. The photograph shows it to be astonishingly similar in appearance to a fine Tulip tree growing in Yancey County, in the same State, which is figured by Elwes and Henry, *Trees of Great Britain and Ireland*, Vol. I., plate 24. The latter, however, was reported to be smaller, 160 feet high by 19 feet in girth.

The White Elm (*Ulmus americana*), the most favourite tree of New England, appears to attain its maximum size in a specimen growing at Wethersfield, Connecticut, 28 feet in girth at 4 feet from the ground, and about 100 feet in height. The largest reported by Elwes is the Lancaster Elm in Massachusetts, which measured 105 feet in height and 24 feet in girth at 5 feet from the ground.

The largest Oak in America is a Valley Oak (*Quercus lobata*), growing on the ranch of B. F. Gruver, in San Benito County, California. This splendid tree is 125 feet in height and $37\frac{1}{2}$ feet in girth, and is said to bear a ton of acorns in a good season. *Q. lobata* is a rare species in England in cultivation but there are thriving specimens at Kew and Tortworth. It is closely allied to our native species, and to the American White Oak (*Q. alba*). The latter, which refuses to grow in England, attains great dimensions in the United States; and some fine specimens (one 25 feet in girth) growing at Waverley, near Belmont, Massachusetts, were figured and described in *Gardeners' Chronicle*, XXXIV., p. 51, figs. 19 and 20 (1903). The largest *Q. alba* reported to the American Genetic Association was only 21 feet in circumference and grew at Atwood, Indiana.

The American Chestnut (*Castanea dentata*) does not, as a rule, attain such a large size as the European species, of which enormous examples are common in England and Ireland, as well as in France, Italy, Madeira, etc. (see *Trees of Great Britain*, IV., 342-851); but a magnificent tree at Crestmont, North Carolina, growing at 2,900 feet altitude, rivals in dimensions the best of our English specimens, being 75 feet in height and 33 feet in girth at 7 feet from the ground.

Other fine trees of their kind recorded at this competition are a Pecan tree (*Carya olivaeformis*), 150 feet in height and 19½ feet in girth, on Cane River, near Bermuda P.O., Louisiana; a *Catalpa speciosa*, 75 feet high and 16 feet in girth, at Luxora, Arkansas; a *Sassafras*, at Horsham, near Philadelphia, no less than 15 feet 10 inches in girth; and a Black Walnut, 24 feet in girth, at Hanover Neck, New Jersey.

CONFESSIONS OF A NOVICE—IV.

I HAD been looking forward to a long afternoon's pottering in the garden, alone and withdrawn from the severe eye of the gardener, who I am pleased to admit has at last so far consented to break with immemorial custom as to take a holiday on Saturday afternoon. It had been somewhat of a struggle to persuade him to agree to this innovation, for his devotion to work rivals that of Adam, the dear old gardener in the forest of Arden. Nevertheless, I had overcome his scruples by making a small advance in his wages, and I was free—within the limits imposed by fear of his subsequent disapproval—to do what I liked.

The late heat wave has played havoc with my lawn, and it was tempting to pass the afternoon holding the hose, listening to the luxurious swish of the spraying water, and hoping that good might ensue. Few garden operations are more satisfying to the novice; for he, in common with all his fellows, knows that he alone may judge of the right amount of water to be given. If in a weak moment he surrenders the handling of the hose to one of his friends he discovers that the work is not being done with a proper regard for thoroughness, and racks his ingenuity for a pretext for recovering possession and control. He fails; for the fascination affects all alike, and it is as easy to gain possession on the seashore of a spade in use for sand fortifications as to recover a squirting hose pipe once it has passed into other hands.

But the hopes of March fade with the leaves in September, and watering brown patches and many weeds and invading "fog grass" seems in the latter months too futile even for a novice. The weeds, too, must be left for the moment, for their roots rivet them to the caked earth. There is, of course, the eternal bonfire, which might be tended, for are we not told that nothing in these days is so precious as potash, and there are dead twigs and prunings innumerable to feed it, as well as many pages of manuscript of confessions unsuitable for publication. But a bonfire under a fierce sun is in a way a work of supererogation, and so it may remain unlit until its rival in heaven is less fiery.

My rule of garden life is, when in doubt visit the kitchen garden, and so I wended my way thither. The wasps were busy with the unripe Pears—fastidious only in that they leave here and there a hanging piece of skin as a memento mori of the fruit. The jays, towse-headed, limbered up and left the late Peas, the pods of which they had been wrecking, and I knew that it was the problem of those same Peas which had subconsciously drawn me to the vegetable quarter. It is a pretty problem, and as my condition requires that I should gain and not impart knowledge, I may try to state it, although to solve it seems like arguing with the inevitable. Often have I read in these pages, over the signature of some distinguished gardener, the phrase "we have been picking Peas steadily up to the second week in October; the variety we grow is —." So I decided, with the complete disapproval of the gardener, that I, too, would give my friends dishes of Peas in these late summer or autumn months. I laid my plans carefully in order to demonstrate the truth of the first maxim of the kitchen garden, that nothing succeeds like succession. I would sow early Peas late, so that they should come in when the main crop was done, and I sowed late Peas in order that they might take up the wondrous tale and give me green Peas wherewith to regale and dazzle my friends in the days of early autumn. The experiment has proved an emphatic failure. The late-sown early Peas grew splendidly, they blossomed freely, and then a mantle of grey mildew stole over their leaves and the blossoms remained in slat for weeks together. The gardener, who is humorous in a grim way, gathered the crop on

the day I was returning home after a week's absence, and insisted on the cook serving them at table. We are a small household, and hence there were several Peas per person. The late sort holds out not much better promise. It is pursuing its leisured growth, is free from mildew, and now and again bears a casual blossom, but as a crop it is, I fear, foredoomed to failure. Indeed, the gardener makes distant allusion to the unwisdom of leaving unfruitful crops on the ground. Hence come my questions: Why should it be impossible, or at least very difficult, to raise a crop of late Peas on a light soil? May it not be possible to obtain yet other varieties which will succeed? I imagine that the difficulty is due to soil temperature. I do not think it is *immediately* due to the effects of drought. I read some years ago, I think in this journal, that soon after a Pea seed has germinated, and apparently as a result of the infection of its roots with the bacterium which provides the plant with nitrogen, the main root is checked and laterals arising near the ground level begin to grow vigorously. If this be so, and the Pea is a surface-rooting plant, my failure and a remedy are perhaps apparent. The failure may be due to the high temperature of the surface layers of the soil, the remedy would seem to be a thorough mulching of the plant as soon as it has made its appearance through the soil.

So I come to the point at which I reach out for the kindly help of more experienced gardeners. They know how their autumn Peas are got, and will, I trust, enlighten me.

I am emboldened to ask, since they have already helped me in answering the questions I have asked them in the course of previous confessions. Thus I am indebted and tender a novice's best thanks to Mr. Alfred T. Harrison for setting at rest my troubles as to the best yellow-flowered rambler Rose. I am about to try Alister Stella Gray, and shall hope later to report whether it succeeds in my untutored hands. A. N.

HOME CORRESPONDENCE.

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

TRADE IN WAR TIME.—A circular has recently been sent by the Royal Horticultural Society to the Fellows appealing on behalf of the seed and nursery trade for more custom; if the experience of others corresponds with mine in this matter a little pressure should be applied in other directions also. A consignment of soft, perishable plants was sent by a well-known firm, packed in five boxes, in a proper manner, by goods train. The distance was only some fifty miles, and it took thirteen days for the plants to reach me; they were in a very bad state owing to partial darkness and drought. The railway company informs me that I have no claim on them for damages, because their traffic is disarranged owing to military requirements, yet several passenger trains are running daily with plenty of spare room, and the plants could easily have come in that way at goods rate without any loss to the railway company. Owing to the delay in transit the plants can only bear about half the usual crop next season; thus both the trade and the food supply of the nation suffers. W. H. Divers, V.M.H., Belvoir Castle Gardens, Grantham.

THE WAR AND THE NURSERY TRADE (see p. 139).—With reference to my communication of August 24, referring to expenditure on gardens, which you were so kind to allow to appear in your columns, it will interest most of your readers to know that a somewhat similar communication was sent to His Majesty's Department for the Royal Parks, to which the following reply has been received. It will be a relief to the minds of many nurserymen, seedsmen, and others to know that their interests are receiving

every possible consideration at the hands of His Majesty's Government:—"With reference to your letter of the 18th ultimo, as to the reduction of planting in the Royal Parks, I am directed by the First Commissioner of His Majesty's Works, etc., to state, for the information of the President and Council of the Royal Horticultural Society, that the question has not yet been settled, but the aspect of the matter to which they draw attention is not being overlooked." W. Wilks.

LARIX DAHURICA (see p. 178).—I was interested in the note of Professor Henry on the Dahurian Larch. As one of the trees, or rather two, grow here (Stanage Park, Radnorshire, not Hereford), I may offer the following remarks, although I do not approach the subject as clothed with the functions of an authority, but merely as one in quest of information. If I read Professor Henry aright, it seems that what we have been taught to regard as *Larix dahurica* is not the Asiatic variety at all, that we must unlearn what we have learnt, burn what we adored—as the converts of old—and adore what we burnt. We are told that the so-called *L. dahurica* is a cross between the Common Larch (*L. europaea*) and *L. americana*, and that it must revert to the name handed down to us, *L. pendula*, by previous generations. Assuredly this is a great compliment to the sagacity of our predecessors. I do not quite understand from Professor Henry's letter whether there are any true Dahurian Larches growing in England at the present day. If there are not, and I rather gather this from his letter, then it seems to me that if *L. dahurica* exists no longer among us, it has forfeited its position in our national stud book of trees, for that is how we regard the volumes of *The Trees of Great Britain*. It has no more right of entry into our national stud book of trees than a dodo has to obtain an entry into a modern poultry volume of registration, or, to argue from closer analogy, than a Kauri Pine or Mahogany tree to a place in an edition of English trees. From an amateur point of view there is no great difficulty in recognising *L. americana*. Its short leaves and tiny cones tell a convincing tale of its identity, but a great many, and among them some who take interest in such matters, would only regard *L. dahurica* or *pendula*, en passant, as the Common Larch with a preternaturally smooth bark. The other differences are the minutest of the minute to most, but while a small rivulet may be said to be the dividing line between *L. pendula* (*dahurica*) and *L. europaea*, a big gulf divides *L. dahurica* from *L. americana*. I have several times compared these differences, with interested friends, and the results of our amateur observations, briefly put, are: (1) The branches of *L. dahurica* (*pendula*) are darker and smoother, and do not show the linear pulvini (alluded to in *Trees of Great Britain*, Vol. II., p. 349), which are so conspicuous on the two-year old branches of *L. europaea*. (2) The cones of our trees of *L. dahurica* are consistently longer, not so thick, and more tapered than those of *L. europaea*. (3) The leaves of *dahurica* are not so tapered as those of *europaea*, we are told, but there is little comfort for the identifier to derive from this, and the difference, if any, is infinitesimally small. (4) The transverse section of the leaves are new evidences to go upon and to be gone into. (5) In the bark there exists the marked difference that called attention to our specimens here, and in its smooth and finely-scaled appearance. The results of our homespun observations are that if it is a cross—and, of course, we accept that as final—the *L. europaea* must have been a very prepotent factor in the result. If the tree has to re-change its name again from *dahurica* to *pendula*, we will try and survive that. As Petronius was the accepted Arbiter Elegantiæ of ancient Rome, so, in this Georgian epoch, do we regard Professor Henry and his coadjutor, Mr. Elwes—I apologise for putting the name of one before the other—as the arbiter arborum of trees of Great Britain, and what they decree we must follow, even if they reverse previous pronouncements. Chas. Cottman Rogers, Stanage Park, Radnorshire.

SOCIETIES.

NATIONAL ROSE.

AUTUMN EXHIBITION.

SEPTEMBER 16.—The autumn show of the National Rose Society was held in the R.H.S. Hall, Vincent Square, Westminster, on the 16th inst. The hall was filled with exhibits. The entries generally were exceedingly good, in most classes the competition was keen, and the attendance was large. Despite the sultry weather, the blooms remained fresh and good until closing time. Two Gold Medals and three Certificates of Merit were awarded to seedlings grown in the open, but there was no entry in the class for a new variety grown under glass.

The Cory Cup, offered by Mr. Reginald Cory, for the best new seedling climbing Rose exhibited at all or any of the Society's three shows during the year, was awarded to Messrs. Wm. PAUL AND SON, Waltham Cross, for their superb variety, Paul's Scarlet Climber, which received a Gold Medal at the Metropolitan Show on June 29 last, and was also much admired at the R.H.S. Shows at Chelsea and Holland House. This variety was illustrated in *Gard. Chron.*, May 29, 1915, fig. 96.

AWARDS.

GOLD MEDAL ROSES.

Golden Emblem (see fig. 68).—This very attractive H.T. Rose may be briefly described as being a robust Rayon d'Or, with bronzy-orange coloured buds, which have a salmon sheen. The fully expanded blooms, which are of rich yellow colour, were rather loose and showed the stamens—a fault which, however, may be due to drought.

Modesty.—A H.T. variety, which was decidedly the best of the new Roses. The flower is of good size and form; the buds are long and pointed. The petals are creamy-white, lightly flushed with pink. Both varieties were shown by Messrs. S. MCGREDY AND SON.

CERTIFICATES OF MERIT.

Tipperary.—A medium-sized H.T. variety of deep saffron-yellow colour. The buds are of good form, but the mature flower is rather loose petalled.

National Emblem.—A richly-coloured H.T. Rose of small to medium size. The flowers have a faint perfume, and it is a desirable Rose for buttonhole wear. The colour is rich velvety-crimson, with a suggestion of maroon in the centre. Both were shown by Messrs. MCGREDY AND SON.

Ulster Volunteer.—A large single, light-crimson H.T. Rose. The petals have a cerise sheen on the middle portion, and there is an almost white band around the yellow stamens which detracts from the otherwise great merit of the flower. Shown by Messrs. HUGH DICKSON, LTD.

PREMIER BLOOMS.

Nurserymen.—H.P., Gloire de Chédane Guinoisseau (Messrs. J. COCKER AND SONS); H.T., George Dickson (Mr. W. H. FRETtingham); T., Alex. Hill Gray (Mr. G. PRINCE).

Amateurs.—H.P., Frau Karl Druschki (Dr. T. E. PALLET); H.T., George Dickson (Mr. JOHN HART); T., Mrs. Foley Hobbs (Dr. T. E. PALLET).

GROUP OF ROSES.

There was only one exhibit in the class for a representative group of Roses on the floor, pot plants and cut blooms to be shown, and Ferns. Palms and other foliage plants included as an edging. But although they had no competitor, Messrs. HOBBS, LTD., Dereham, set up an arrangement which was fully worthy of the Gold Medal and 1st prize. The pillars of Effective and a weeping standard of Paul Transon placed over a groundwork consisting of massed plants of Baby Tausendschön, Ellen Poulsen, and Baby Elegance, with a bold bordering of baskets and vases of such exhibition Roses as General McArthur, Madame Abel Chatenay, J. L. Mock, Mrs. A. E. Coxhead and Frau Karl Druschki, to name a few only, made a memorable display.

In the classes for representative groups of cut Roses arranged on staging, there was excellent competition, and many thousands of beautiful Roses were massed with great effect.

Messrs. W. AND J. BROWN, Peterborough, won the 1st prize in the largest class with a tasteful arrangement in which stands of Lady Pirrie, Madame Jules Gravereaux, Sunburst, and Mrs. H. Stevens stood out over a groundwork of desirable blooms. Mr. JOHN PIGG, Royston, Herts, the winner of the 2nd prize, did not arrange his equally beautiful blooms with such good effect, but many visitors admired the different varieties used. The Rev. J. H. PEMBERTON, Havering, was placed 3rd.

The 1st prize in the smaller group class was won by Messrs. G. JACKMAN AND SON, Woking, who had delightful banks and massed vases of such Roses as *Le Progrès*, *Frau Karl Druschki*, *Willowmere*, *Lady Hillingdon*, and *General McArthur*. The chief varieties used by Messrs. B. R. CANT AND SONS, Colchester, who won the 2nd prize, were *Lady Pirrie*, *Lyon Rose*, *Madame Ed. Herriot* and *Alexandra Zarifi*; 3rd, Messrs. R. HARKNESS AND CO., Bedale.

BLOOMS SHOWN ON BOARDS.

The premier class, which requires thirty-six distinct varieties of general exhibition Roses, made an imposing array of blooms. Messrs. A. DICKSON AND SONS, Newtownards, Ireland, won the 1st prize. Of their splendid exhibit perhaps the pink H.T. blooms were the best, and of this colour *Bertha Gaulis*, *Coronation*, *Countess of Shaftesbury* and *Mildred Grant* called for special mention. *Gloire de Chédane Guinoisseau*, H. V. Machin, *Edward Bohane* and *Hugh Dickson* of the reds and scarlets were also very meritorious. Messrs. J. COCKER AND SONS, Aberdeen, won the 2nd prize, and although their exhibit was not of such even quality as the foregoing it contained some excellent individual blooms, such as those of *Mrs. John Laing*, *Avoca*, *La France* and *Gloire de Chédane Guinoisseau*. Messrs. B. R. CANT AND SONS, who were awarded the 3rd prize, showed a prodigious bloom of *Frau Karl Druschki*.

In the class for 12 blooms of *Teas* and *Noisettes* Mr. G. PRINCE, Oxford, won the 1st prize, and his board was particularly noteworthy for the excellence of the varieties of yellow colouring; *Alex. Hill Gray*, *Lady Plymouth*, *Madame C. Soupert* and *Madame J. Dupuy* were particularly fine; 2nd, Mr. JOHN PIGG, Royston, with such sorts as *W. R. Smith*, *Mrs. C. Hall*, *Mrs. J. Mawley* and *Mrs. Foley Hobbs* in good condition; 3rd, Mr. G. LONGLEY, Oxford.

DECORATIVE ROSES.

The classes for baskets of Roses were very popular with the exhibitors. The best five of exhibition varieties were set up by Messrs. CHAPLIN BROS., Waltham Cross, whose predominant varieties were *Caroline Testout*, *Alex. Hill Gray* and *Frau Karl Druschki*; Mr. G. PRINCE was placed 2nd and Mr. G. LONGLEY 3rd.

Messrs. HUGH DICKSON, LTD., Belfast, with brilliant blooms of *Hugh Dickson*, won the 1st prize for a basket of 12 blooms of any one variety; 2nd, Mr. G. PRINCE, who had almost as good blooms of *Mrs. Foley Hobbs* variety.

There was very good competition with 12 vases of perpetual flowering Roses. Messrs. A. DICKSON AND SONS won the 1st prize with effective vases of *Red Letter Day*, *Mrs. G. Shawyer*, *Duchess of Wellington* and similar sorts; 2nd, Messrs. HUGH DICKSON, LTD.

The baskets of cut decorative Roses induced a fine competition. The best nine were set up by Messrs. HUGH DICKSON, LTD., who included *Golden Spray*, *Irish Elegance* and *Madame Ed. Herriot*. Messrs. CHAPLIN BROS., who won the 2nd prize, also showed especially good baskets, and had *Lyon Rose* and *Ophelia* of good form. The exhibits of five baskets were of equally high merit. Mr. E. J. HICKS excelled with such sorts as *Joanna Bridge* and *Princess Mary*, and Mr. W. EASLEE, Essex, was a good 2nd and Mr. G. PRINCE 3rd.

In the class for twenty-four vases of perpetual flowering Roses, other than *Polyanthas* and *Pompons*, Mr. J. MATTOCK, Oxford, won the 1st prize with beautiful vases of *Mons. Paul Lede*, *Sunburst*, *Beauté de Lyon* and similar varieties. Messrs. F. CANT AND CO., who were placed 2nd, had a superb vase of *Rayon d'Or*. Mr. F. SPOONER, Woking, showed the best twelve vases of similar varieties.

The twelve vases of *Polyanthas* and *Pompons* were not so good, but the 1st prize exhibit of Messrs. F. CANT AND CO. included praiseworthy vases of *Ellen Poulsen* and *Rosalind*; 2nd, Mr. E. J. HICKS.

The large class for thirty-six vases of any sorts of *Roses*, arranged over a space not exceeding 14 feet by 3 feet, made an imposing display. Messrs. F. CANT AND CO. won the 1st prize with a superb exhibit of such varieties as *Rayon d'Or*, *Sunburst*, *Comte G. de Rochemur* and *Lady Hillingdon*. The outstanding varieties shown by Mr. J. MATTOCK, who won the 2nd prize, were *Mrs. Aaron Ward*, *Marquise de Sinety* and *Mrs. H. Stevens*; 3rd, Messrs. B. R. CANT AND SONS. Mr. E. J. HICKS won the 1st prize for twelve similar varieties with an excellent exhibit.

A class for hips of nine species or varieties of *Rose* attracted a deal of attention. Mr. E. J. HICKS, showing such as *Rosa Moysi*, *R. rubrifolia* and *R. pomifera*, won the 1st prize.

Mr. A. W. ATKINSON won the 1st prize. In similar classes for smaller growers the 1st prizes were won by Mr. S. R. LAUGHTON and Mr. H. CARELL.

Tea and *Noisette* *Roses* in the amateurs' section were not nearly so good as in the nurserymen's classes. The chief class, for twelve varieties, was represented by only two exhibits of moderate quality. Dr. T. E. PALLETT won the premier prize. Mrs. H. BALFOUR was the only exhibitor of nine varieties, and she was awarded the 1st prize for a creditable collection.

The flowers in the classes for *Roses* shown in vases were much more attractive. The best seven vases of miscellaneous *Roses* were staged by Dr. PALLETT, who had a splendid exhibit, from which two premier blooms were selected; Mr. E. B. LEHMAN followed closely. Mrs. OAKLEY-FISHER was the most successful of many exhibitors of five vases, and Mrs. H. BALFOUR, who included a splendid basket of *Mrs. Sam Ross*, won the 1st prize for three baskets of



FIG. 68.—ROSE GOLDEN EMBLEM.
(See "Gold Medal Roses" on p. 204.)

AMATEURS' CLASSES.

Dr. T. E. PALLETT was an easy winner of the premier class for exhibition *Roses* displayed on boards. His eighteen blooms included excellent examples of *Avoca*, *Florence Pemberton*, *Frau Karl Druschki*, *Mildred Grant* and Dr. O'Donel Browne.

There was good competition with twelve similar varieties, where Mr. R. DE V. PRIOR, who had splendid blooms of *Caroline Testout*, *Madame Jules Gravereaux* and *Frau Karl Druschki*, won the 1st prize; Mr. JOHN HART, who included a very good bloom of *Mrs. J. H. Welch*, was placed 2nd. Mr. W. MOORE excelled in the class for nine blooms, and showed *Madame C. Soupert* and *Wm. Shean* of high quality. There were only two exhibits in the class for six blooms, which was open to growers of fewer than 500 plants, and, with fine blooms of such as *Dean Hole* and *Mrs. Foley Hobbs*,

cut *Roses*. Mr. H. R. DARLINGTON showed the best (1) basket of any one variety, with *Madame Jean Dupuy*; (2) twelve vases of *Roses* (an excellent exhibit); and (3) hips of five species or varieties.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 20.—The first meeting of the executive committee for the session 1915-1916 was held on Monday last at Carr's Restaurant, Strand. Mr. Thomas Bevan presided.

The Cape Town Horticultural Society was admitted in affiliation. It was resolved that a large silver medal be presented to the Stoke Newington Chrysanthemum Society for competition at its next show. The financial statement was submitted, and was considered satisfactory in the exceptional circumstances. It was resolved not to hold the annual dinner this year.

The secretary announced that members of the N.C.S. and of affiliated societies would be allowed to introduce friends free of charge at the three lectures on October 4, November 3 and December 8.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

SEPTEMBER 13.—The monthly committee meeting of this Society was held at the R.H.S. Hall on Monday, the 13th inst., Mr. C. H. Curtis presiding. One new member was elected. Two members were allowed to withdraw double the amount of interest, viz., £4 4s. and £2 3s. 8d. respectively. The amounts of £10 18s. 2d. and £1 18s. 7d. were passed for payment to the nominees of two deceased members. The sick pay for the month on the ordinary side amounted to £45 9s., and on the State section to £22 9s. 10d., and maternity benefits to £10 10s. A new rule respecting members serving in H.M. Forces was recommended to be put forward at a special general meeting in due course.

"DAILY MAIL" VEGETABLE SHOW.

SEPTEMBER 22-24.—The Exhibition of Vegetables organised by the proprietors of the *Daily Mail* was held on the above dates in the Royal Horticultural Hall, Westminster. It was originally intended to hold the show at Olympia, but the military authorities requisitioned the building for their own use. The R.H.S. Hall was found to be too small to accommodate the whole of the produce sent in, but a good selection was made, and all the sections were well represented. The scope of the exhibition was extended to include not only vegetables, but other home-grown produce, and was, in fact, described on some of the tickets as a "Home-grown War Food Exhibition." It is regrettable to observe, from the generally poor quality of most of the exhibits, how low a standard prevails among many amateur growers of the type which the show attracted in such large numbers.

The show was opened by the Hon. Sir Horace Plunkett, K.C.V.O. In his opening speech he observed that the show had performed a most valuable function in bringing together more than 20,000 persons in competition to produce food of the highest quality. Hitherto it had been the policy of this country to concern itself comparatively little with the subject of food-production, and to devote all its energies to the development of industry, both here and in the Colonies. Now, however, this state of things must to a certain extent be altered, and it would be necessary for us seriously to formulate, and earnestly and consistently to pursue, an agricultural policy which will have the effect of enabling our country to produce all the food she required of the best possible quality.

With regard to the show itself, as might be expected, competition was keener than at any previous vegetable show. In some of the classes there were more than 2,000 entries, and in the important one for nine distinct vegetables, open only to professional gardeners, no fewer than 148 competed. It is to be regretted that more skill and originality had not been expended on the staging of the different exhibits, and on their arrangement in groups. The Hall failed to present an attractive appearance, and there was an entire absence of foliage and other material which would have lightened the sombre rows of vegetables arranged in plain deal boxes. This is all the more surprising since, for many years past, professional exhibitors have demonstrated the possibility of making an exhibit of vegetables as attractive as a group of exotics. It is true that a few well-known exhibitors did stage their produce effectively; but these cases were the exception rather than the rule, and did little to relieve the general dullness.

It might have been expected that among so large a number of exhibitors something of really outstanding merit would have been forthcoming; but there was nothing in the way of a surprise. We may, however, make an exception in favour of a dish of Carrots of superb quality, which were universally acknowledged to be perfect specimens.

CLASS A.—Exhibits of professional gardeners, nine distinct kinds. Here, as in the show generally, there were a few collections of very good quality, among a large number of mediocre or poor exhibits. There was a neck-and-neck race for the 1st prize in this class between Mr. JAS. GIBSON (gr. to the Duke of Portland), Welbeck Abbey Gardens, and Mr. E. R. JAMES (Lord North's gardener at Wroxton Abbey). It is interesting to record that Mr. JAMES, who was formerly employed under Mr. Gibson, just managed to beat his former chief by half a point; indeed, so close were the two exhibits that we understand the judges at first bracketed them. Both were worthy of the occasion. Mr. JAMES' dishes were Cauliflower Autumn Mammoth, Celery Superb Pink, Leek Prizetaker, Potato Superlative, Onion Ailsa Craig, Carrot New Red Intermediate, Pea Gladstone, Tomato Perfection, and Bean Prize-winner. The Onions were superb, and the Carrots also were of especial merit. The Cauliflowers were of medium size but of good quality; the Peas also constituted a noteworthy dish.

Mr. Gibson showed Cauliflower Early Giant, Celery Pink Perfection, Onion Ailsa Craig, Carrot New Red Intermediate, Tomato Eclipse, Bean Prize-winner, Potato Supreme, and Pea Superlative. The Leeks were amongst the best in the show, and there were no finer Potatoes as regards clearness of skin, regularity of size and general refinement. The 3rd prize was awarded to Mrs. JENNER, Wenvoe Castle, near Cardiff (gr. Mr. H. Wheeler); 4th, W. H. MYERS, Esq., Swanmore Park, Bishops Waltham (gr. Mr. G. Ellwood).

CLASS B.—This class was for a collection of six distinct kinds, open to employers of a single-handed gardener only. It was in this class that the Carrots referred to above were shown by T. RULE OWEN, Esq., The Glen, Haverfordwest, and the same exhibitor had exceptionally large Parsnips, which might, however, be objected to on the score of coarseness. Beyond this there was nothing remarkable in the collection, and he gained only the 3rd prize. The 1st prize was won by G. H. BROOKS, Esq., The Manor, Westock, Barton, near Steeple Aston; 2nd, Mr. W. G. MILLAN, The Cottage, Bampton.

CLASS C.—The schedule required four distinct kinds from an exhibitor not employing a regular gardener, but obtaining occasional help. A well-known exhibitor, Mr. TOM JONES, Bryn-pen-y-lan, Ruabon, was awarded the 1st prize for Carrot New Red Intermediate, Onion Ailsa Craig, Pea Gladstone, and Potato Defiance. Mr. F. SMITH, of Bedford, was placed 2nd.

CLASS D.—This was for three distinct kinds and open only to those employing no gardener at all. The conditions appertaining to this class were the simplest, and a large number of entries were forthcoming, no fewer than 1,100 boxes being received. The exhibits call for no special comment, though it may be stated that the number of inferior collections was surprising. The 1st prize was awarded to Mr. JOHN HAYCOCK, Gylfa, near Wrexham. It was interesting to note that all the prize-winners in this class had adopted the same method of arrangement, viz., the boxes were lined with cloth, and the Onions placed each on an iron ring.

CLASS F.—For uniformity of quality the market gardeners' class was the best. It called for six distinct kinds, and was open only to market gardeners and those professionally engaged in horticulture. The exhibit shown by Mrs. C. BARNETT, Overton, Ellesmere, Salop (who was awarded the 1st prize), was very commendable, not only for the quality of the produce but also for the arrangement of the group. The varieties were not named, but they comprised good specimens of Onions, Carrots of the stump-rooted type, Cauliflowers, Potatoes, Peas and Celery. The 2nd prize was awarded to Mr. R. GIBSON, St. Meddons Nursery, Troon, Ayrshire, who showed exceptionally large, solid heads of white Celery; his Cauliflowers also were of very good quality.

A special class was provided for Potatoes, and the exhibits were arranged in the lecture-room. There were three sections, open to (a) farmers, (b) allotment holders, and (c) professional gardeners. Most of the exhibitors seemed to think that large size was chiefly required; but the judges naturally had an eye to quality, includ-

ing refinement, and the dozen largest tubers were unplaced, although they aggregated 28 lbs. in weight. The variety was apparently White Elephant.

The variety Great Scott was placed 1st in two sections, and a variety of the Up-to-date type in the farmers' class. The prize in the professional gardeners' class was awarded to H. SPENDER CLAY, Esq., Ford Manor, Lingfield (gr. Mr. D. Gibson), for perfect tubers of the Great Scott variety.

It is needless to point out that this exhibition is one of national importance. On the wider aspect which it presents we shall hope to comment next week.

HORTICULTURAL TRADES' ASSOCIATION OF GREAT BRITAIN AND IRELAND.

SEPTEMBER 14.—The Annual Meeting and dinner of the above Association were held at the Hotel Windsor, Westminster, on Tuesday, the 14th inst. On account of the continued war crisis Rule IV. was suspended, and the president (Mr. W. Cuthbertson (Edinburgh), the secretary (Mr. C. E. Pearson, Lowdham), and the members of the Council were all re-elected.

Mr. E. A. Bunyard, Mr. W. Thomson (Clovenfords), and Mr. Ernest Merryweather (Southwell) were elected to fill three vacancies on the Council.

The president referred to the great loss the Association had sustained by the deaths of Mr. D. W. Thomson, Edinburgh, a member of the Council, and Mr. T. A. H. Rivers, a former president, and moved votes of sympathy with the relatives of the deceased, which the members carried by standing in silence.

The Association is in a flourishing state financially, and has carried out much important work during the past year.

NORTH OF SCOTLAND HORTICULTURAL AND ARBORICULTURAL.

SEPTEMBER 13.—The annual meeting of this association was held in the Botany Classroom, Aberdeen University, on the 15th inst. There was a good attendance. Mr. William Lockhart, president, occupied the chair. The office bearers of last year were re-appointed, the following gentlemen being added to the committee:—Messrs. G. E. Greenhowe, Lecturer in Horticulture, Aberdeen College of Agriculture; A. Webster, James King, and A. Murray. The balance-sheet showed that the total funds at the credit of the Association amounted to £15 15s., as compared with £17 10s. 9d. last year.

SCOTTISH HORTICULTURAL.

SEPTEMBER 7.—The monthly meeting of this Association was held on the 7th inst. Mr. Pirie, the president, was in the chair, and there were sixty members present. A paper on "Grape-Growing" was read by Mr. Hugh MacSkimming, Auchanault Gardens, Helensburgh.

The exhibits were:—New frilled fancy Panies and Dahlias, from Messrs. DORRIE AND Co., Edinburgh; a collection of Apples from Miss HAYWOOD, Edinburgh (awarded a Cultural Certificate); and Tomato The Buckeyed State, from Mr. R. CAIRNS, Murieston, Mid-Calder. A First-class Certificate was awarded to Collette Dahlia Cormorant, and Certificates of Merit to Collette Dahlias Doon and Thames, exhibited by Messrs. DORRIE AND Co.

NURSERY AND SEED TRADE ASSOCIATION.

SEPTEMBER 15.—The annual and committee meetings of this Association were held at the offices of the Association, 32, Gresham Street, London, on the 15th inst., at which the following members were present:—Mr. Frank W. Ladds, Mr. G. H. Barr (Messrs. Barr and Sons), Mr. Stuart H. Low (Messrs. Stuart Low and Co.), Mr. Leonard, Mr. Graves (St. George's Nursery Co.), Mr. Amos Perry, Mr. J. P. Slade (Messrs. Protheroe and Morris), Mr.

A. W. Paul (Wm. Paul and Son (Waltham Cross), Ltd.), and Mr. W. C. Slocock. Mr. Slade occupied the chair.

The report and balance-sheet of the Association was passed and directed to be printed. The balance standing to the credit of the Association on June 30 last was £89 18s. 3d. The membership, after eliminating the German members, is 152.

The new secretary reported that since his appointment on May 15 last 632 debts (amounting to £2,139 2s. 2d.) had been sent by members to the Association for collection, and that 202 enquiries relative to the financial position of applicants seeking credit to the extent of £9,210 had been answered by the Association. It was stated by one of the members present at the meeting that the solicitor for the Association had recovered for him from one of the railway companies £160 for rebate in railway charges for services rendered by such member in the transit of goods by such railway.

TRADE NOTE.

G. R. PHIPPS, BOGNOR.

MR. G. R. PHIPPS has taken over the business formerly carried on by Messrs. Phipps and Ireland, Alpine Nursery, Bognor, Sussex.

THE WEATHER.

WEATHER IN WEST HERTS.

Week ending September 22.

A Very Warm, Dry, Calm, and Sunny Week.—This was a very warm week for the middle of September. On the two warmest days the temperature in the thermometer-screen rose respectively to 78° and 77°—unusually high readings for the month; and on the warmest night the exposed thermometer did not fall below 57°, making this, with one exception, the warmest night I have recorded here in September during the 29 years over which my records at Berkhamstead extend. On the coldest night the same thermometer fell to within 3° of the freezing point. The ground is at the present time at an average temperature at 1 foot deep and 1° warmer than is seasonable at 2 feet deep. No rain at all fell during the week, and no rainwater has come through the bare soil percolation gauge for over a fortnight, or through that on which short grass is growing for seven weeks. The sun shone on an average for eight hours a day, which is over three hours a day longer than is usual in September. On the sunniest day the sun was shining brightly for over ten hours. With the exception of the first day, when light airs prevailed, the atmosphere has been again singularly calm. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by 11 per cent. E. M.

MARKETS.

COVENT GARDEN, September 22.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Arums, per doz. ..	4	0	4	6	
Asters, white, per doz. bun. ..	2	0	3	0	
—pink, per doz. bun. ..	1	6	2	6	
—purple, per doz. bun. ..	2	6	3	0	
—mauve, per doz. bun. ..	1	6	3	0	
—single, per doz. bun. ..	1	6	2	0	
Carnations, per dozen blooms, best American varieties ..	1	0	2	0	
—smaller, per doz. bunches ..	8	0	10	0	
—Carola (crimson), extra large ..	2	6	3	0	
—Malmesbury, per doz. blooms ..	6	0	8	0	
—pink ..	6	0	8	0	
Chrysanthemums, white, per doz. blooms ..	1	3	2	6	
—Yellow, per doz. blooms ..	1	0	2	0	
—Bronze, per doz. blooms ..	1	0	1	6	
—Pink, per doz. blooms ..	1	0	2	0	
—White, per doz. bunches ..	4	0	5	0	
—Bronze, per doz. bunches ..	3	0	4	0	
—Pink, per doz. bunches ..	3	0	5	0	
—Yellow, per doz. bunches ..	3	0	4	0	
Enchirid, per doz. ..	2	0	2	6	
Gardenias, per box of 15 and 18 blooms ..	1	6	2	6	
Gladoli: —Brenchleyensis, per doz. spikes ..	1	6	2	0	
Lapageria, per doz. blooms ..	1	6	2	0	
Lilium longiflorum, per doz. long ..	2	0	2	6	
—short ..	2	0	—	—	
—lanceifolium album, long ..	2	0	2	6	
—short ..	1	6	2	6	
—lanceifolium rubrum, per doz. long ..	1	3	1	6	
—short ..	0	8	1	0	

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum Fern (Maidenhair) best, per doz. bunches ..	3	0	5	0	
Agrostis (Fairly Grass), per doz. bunches ..	2	0	4	0	
Asparagus plumosus, long trails, per half-dozen ..	1	6	2	0	
—medium, doz. bunches ..	12	0	18	0	
—Sprengeri ..	6	0	12	0	
Carnation foliage, doz. bunches ..	3	0	5	0	
Croton foliage, doz. bunches ..	12	0	15	0	
Cycas leaves, per doz. ..	—	—	—	—	
Eulalia japonica, per bunch ..	1	0	1	6	
Fern, French, per doz. bunches ..	0	6	0	8	
—common ..	3	0	4	0	
Galax leaves, green, per doz. bun. ..	2	0	—	—	
Grasses, various, per doz. bun. ..	1	6	2	6	
Hardy foliage, various, per doz. bun. ..	4	0	8	0	
Lichen Moss, per doz. boxes ..	—	—	—	—	
Moss, gross bunches ..	5	6	0	6	
Myrtle, doz. bunches, English ..	6	0	—	—	
—small-leaved ..	6	0	—	—	
—French, per doz. bunches ..	1	0	1	3	
Peristia, per doz. bun. ..	9	0	10	0	
Smilax, per bunch of 6 trails ..	1	0	1	6	

REMARKS.—Large quantities of flowers are reaching the market, and consequently the prices realised are lower than they have been. Blooms of Lilium longiflorum are cheaper than they have been for some weeks past; good Richardias (Arums) from home growers are obtainable. Violets are more plentiful, and the double variety, Marie Louise, is also on sale. Unfortunately, the majority of the single varieties are being sent from Cornwall, and, owing to the warm weather, the flowers curl immediately they are unpacked, and consequently many of them are unsaleable. There is an abundant supply of hardy foliage, but Asparagus plumosus, A. Sprengeri, and Adiantum Fern are not so plentiful as they have been.

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

	s.d.	s.d.		s.d.	s.d.
Aralia Sieboldii, dozen ..	4	0	6	0	
Araucaria excelsa, per dozen ..	18	0	21	0	
Asparagus plumosus nanus, per dozen ..	10	0	12	0	
—Sprengeri ..	6	0	8	0	
Aspidistra, per doz. green ..	18	0	80	0	
—variegated ..	30	0	60	0	
Ast'ra, in 48's, per doz. ..	3	0	5	0	
Cacti, various, per tray of 15's ..	4	0	—	—	
—tray of 12's ..	5	0	—	—	
Campanula isophylla alba, 48's, per dozen ..	6	0	8	0	
Chrysanthemums, in 48's, per doz. ..	6	0	10	0	
Cocos Weddelliana, 48's, per doz. ..	18	0	30	0	
—60's, per doz. ..	8	0	12	0	
Croton, per dozen ..	18	0	30	6	
Dracaena, green, per dozen ..	10	0	12	0	
Eriacis, white, 48's, per doz. ..	12	0	18	0	
—pink, 48's, per doz. ..	12	0	15	0	
—thumbs, per dozen ..	4	0	6	0	
Ferns, in thumns, per 100 ..	8	0	12	0	

REMARKS.—Business is more brisk, Eriacis and Chrysanthemums being the chief attractions. There is usually a good demand for miniature Heathers, which are offered for sale in small numbers. Solanums and Kochias are seen on the salesmen's stands.

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples: —English cooking, per bus. ..	1	6	3	6	
—Dessert, per ½ bus. ..	1	3	3	0	
Bananas, bunch: —Medium ..	7	6	—	—	
—X-medium ..	8	6	—	—	
—Extra ..	9	6	—	—	
—Double X ..	10	6	—	—	
—Giant ..	11	0	14	0	
—Red, per ton ..	£15	—	—	—	
Jamaica, per ton ..	£18	—	£14	—	
Blackberries, per peck ..	2	6	—	—	
Cobnuts, per lb. ..	0	3	½	—	
Damsons, per ½ bus. ..	2	6	3	0	
Figs, per doz. ..	1	0	—	—	
Grape Fruit, per case ..	21	0	24	0	
Grapes: English, Black, per lb. ..	0	4	1	6	
—Almeria, per brl. of 60 lbs. ..	—	—	—	—	
—Canon Hall, per lb. ..	1	6	4	0	

REMARKS.—English cooking Apples are very plentiful, and Worcester Pearmain forms the bulk of dessert varieties. Many varieties of Pears are obtainable, but the supply of these fruits from the Continent is limited. Plums are less plentiful than they have been, but some good specimens of the varieties Golden Drop and Grand Duke are arriving from California, packed in cases. Damsons, Sloes, and Blackberries are all plentiful. The quantities of Cobnuts and Walnuts are increasing daily. Grapes are plentiful, and are being received from home growers, the Channel Islands, and Holland. Pineapples, but only well coloured fruits are in demand. Melons have been scarce. Figs are arriving in sufficient quantities to satisfy the demands. E. H. R., Covent Garden, September 22.

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes, Globe, per doz. ..	1	6	4	6	
Asparagus, Paris green ..	2	0	2	6	
Aubergines, per doz. ..	2	0	2	6	
Beetroot, per bus. ..	2	0	2	6	
Brussel Sprouts, per ½ bus. ..	3	0	3	6	
Cabbage, per tally ..	5	0	8	0	
—Red, per doz. ..	2	0	—	—	
Carrots, per doz. ..	2	6	—	—	
Cauliflowers, per tally ..	8	0	10	0	
Celery ..	12	0	18	0	
Corncobs, per doz. ..	1	0	1	6	
Cucumbers, per doz. ..	1	6	3	0	
French Beans, per ½ bus. ..	2	6	—	—	
Garlic, per lb. ..	0	10	1	0	
Herbs, per doz. bunches ..	2	6	6	0	
Leeks, per dozen ..	2	0	2	6	
Lettuce, Cabbage and Cos, per doz. ..	1	6	3	0	
Marjoram, per doz. ..	6	0	—	—	
Mushrooms, cultivated, per lb. ..	1	6	—	—	

REMARKS.—Tomatoes are much more plentiful, and consequently cheaper. Mushrooms are still scarce.

PUBLICATIONS RECEIVED.—*The Journal of Agricultural Science*, September, 1915. (London: Cambridge University Press.) Price 5s. —*Report of the Porto Rico Agricultural Experimental Station*, 1914. (Washington: Government Printing Office.) —*The Avocado in California*. (Bulletin 254, Agricultural Experiment Station, Berkeley, California.) —*The Toxicity of Fungi of Various Orders and Salts, Particularly Those Used in Wood Preservation*. By C. J. Humphrey and Ruth M. Fleming. (United States Department of Agriculture, Bulletin No. 227, Washington: Government Printing Office.) —*A Bacterial Disease of Lettuce*. By N. A. Brown; and *Further Studies of the Embryology of Toxoptera graminum*. By W. J. Philips. (Reprints from *Journal of Agricultural Research*, Washington, Vol. IV., No. 5. Washington: Government Printing Office.) —*Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew*. (London: Jas. Truscott & Son, Ltd.) Price 3d. —*New Garden Plants of the Year 1914*. Bulletin of Miscellaneous Information, Kew. (London: Jas. Truscott & Son, Ltd.) Price 2d. —*The British Fern Gazette*, September, 1915. Edited by C. T. Drury. (Westmireland: The British Pteridological Society, Kendal.) —*Bulletin of the Department of Agriculture, Trinidad and Tobago*. (Trinidad: Government Printing Office, Port of Spain.) —*General Abstracts Showing the Acreage Under Crops and the Numbers and Descriptions of Live Stock in Each County and Province, Ireland*. (London: T. Fisher Unwin, Ltd.)

There are a few good Pens to be obtained, and Beans are plentiful, but Vegetable Marrows and Cauliflowers are scarcer than they have been. Trade in all departments is fairly good. *E. H. R., Covent Garden, September 23.*

New Potatoes.			
s.d. s.d.	Kent—	s.d. s.d.	
Bedford—	Puritan	4 0 4 3	
Epicure ..	Eclipse	3 9 4 3	
Eclipse ..	Sharpe's Express	4 0 4 6	
Blackland ..	Lincoln—		
	Queen	3 9 4 3	
	Epicure	3 9 4 0	
	Eclipse	3 9 4 3	

REMARKS.—Trade remains quiet, except for best quality tubers, which are not very plentiful. There are ample stocks in London, but the bulk is of the more common varieties. *Edward J. Neuborn, Covent Garden and St. Pancras, September 23, 1915.*

GARDENING APPOINTMENTS.

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

Mr. T. Ironside, for 4½ years Gardener to Miss E. M. COCHRANE, Seagraves, Chichester, as Gardener to C. A. LAYCOCK, Esq., Stumperlow Grange, Fulwood, Sheffield.

Mr. C. Stedman, for the past 4½ years Gardener to G. B. EWING, Esq., Claydene, Epsombridge, Kent, as Bailiff and Gardener to the same gentleman at the same address.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS'.—The first meeting of the Winter Session was held on the 8th inst. The number of members present was smaller than usual. Mr. T. Batchelor showed some fine Ailsa Craig Onions, for which a Cultural Certificate was awarded. Two new members were elected. The subject for the evening's consideration was "Strawberry Culture," introduced by Mr. J. Stephens, of Culham Court Gardens, in a very practical manner. He treated on outdoor and indoor cultivation of the Strawberry, referring to the soil and its cultivation, planting, setting, gathering, making new beds, insect and other enemies, potting, temperature and feeding.

BATH GARDENERS'.—The members of the Bath and District Gardeners' Debating Society met on the 13th inst. under the presidency of Captain C. T. Foxcroft, at the Foresters' Hall. Mr. F. Townsend (of Messrs. Sutton and Sons, Reading) gave a lantern lecture entitled "Hardy Annuals, including Stocks and Asters"; Mr. F. G. Cox, another representative of the firm, operating the lantern. The lecturer pointed out that annuals were frequently sown in a somewhat poor unworked soil, and then left to themselves, without judicious thinning, careful staking and watering. This lack of care gave them the appearance of poor, starved, sickly subjects. The first two points to be considered in the successful culture of annuals are situation and soil. The best position for a border of annuals was one facing south or south-east, with a good background. Many useful hints of a general character were given and the different varieties were then described in detail. Many of the slides were taken from autochrome photographs.

CATALOGUES RECEIVED.

R. VEITCH AND SON, Exeter.—Fruit Trees, Roses, Bulbs.
PREMIER SEED CO., LTD., Brighton.—Bulbs.
FRANK DICKS AND CO., 110, Deansgate, Manchester.—Bulbs and Roses.
BARR AND SONS, King Street, Covent Garden, London.—Bulbs and Bulbous Plants.
W. DRUMMOND AND SONS, LTD., 57, 58, Dawson Street, Dublin.—Bulbs.
CHAS. TURNER, Slough.—Bulbs.
WALTER EASTLE, Dancroft Rosery, Leigh-on-Sea, Essex.—Roses.
T. CROSS, 2, Abbeygate Street, Bury St. Edmunds.—Bulbs.
EDMONDSON BROTHERS, Dublin.—Bulbs and Flower Roots.
G. COOLING AND SONS, Bath.—Bulbs.
RURAL INDUSTRIES, LTD., Ingham, Norwich.—Wattle Gardening.
MURPHY, STEDMAN, AND CO., LTD., 180, Gray's Inn Road, Holborn, London.—Plant, Machinery and Horticultural and Farm Sundries.
DANIELS BROS., LTD., Norwich.—Bulbs, Flower Roots, Fruit Trees, Roses.
G. R. PHIPPS, Barnham, Bognor, Sussex.—Alpines, Rock Plants, Bog Plants, Shrubs.
M. H. SINCLAIR, 156, Union Street, Aberdeen.—Bulbs.
DOBIE AND MASON, 22, Oak Street, Manchester.—Bulbs.
ED. WEBB AND SONS, Stourbridge.—Seed Corn.

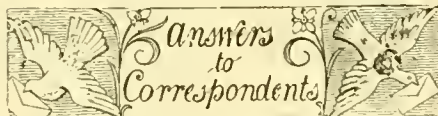
Foreign.

Str. PRZEDPELSKI and T. ANTONIEWICZ, Institutskaja 8, Kieff, Russia.—Conifers, Trees, and Shrubs.
V. LEMOINE and SON, Rue du Montet, Nancy, France.—Greenhouse Plants, Ferns, Shrubs, Perennial Plants.

Obituary.

M. PIERRE THIÉBAUT.—The news of the death of this genial and amiable Parisian seedsman, who for many years carried on business in the Place de la Madeleine, will be learned with great regret by his many friends in this country. He was well advanced in years, and did his military service in the last war of 1870. Although he retired from business about ten years ago he still took an interest in his son's garden at Le Vesinet, his son having taken over the active working of the business. It is sad to think that he passed away while his son Emile is still a prisoner in Germany. M. Thiébaud, sen., was successively appointed a Chevalier, Officer, and finally Commander of the Order of the Mérite Agricole.

EDWIN LONSDALE.—The *American Florist* records the death of Mr. Edwin Lonsdale, superintendent of Messrs. W. Atlee Burpee and Co.'s seed farms at Lompoc, California. Mr. Lonsdale was born in a small hamlet near Shrewsbury, but removed with his parents at an early age to Shestone, near Lichfield, Staffordshire. After leaving school he served some years in various Staffordshire gardens, including those of Manley Hall, and about 1865 was engaged in the gardens at Hanover Lodge, Regent's Park, London. Later he returned to Staffordshire, and was employed there under the late Stephen Taplin, of Detroit, Mich., in the gardens of Enville Hall. He settled in America in 1869, and in 1875 started a nursery business at Germantown. He grew Roses and other flowers for the Philadelphia market. He also devoted himself to the cultivation of Orchids, having a large stock of Cattleyas and Cypripediums. Cypripedium Sanderianum was found in a batch of imported C. Lawrenceanum, and was sold to Messrs. Sander and Sons, St. Albans. Deceased raised a number of Cypripedium seedlings. When the American National Chrysanthemum Society was organised at Buffalo, N.Y., on August 22, 1889, under the name of the American Chrysanthemum Society, he was elected secretary, and served until the first annual meeting at Chicago, November 11-15, 1902.



APPLE DISEASED: *Earnest.* The Apples are affected with the disease known as "scab"—*Fusicladium dendriticum*. Next spring, when the leaves are young, spray them with the Bordeaux mixture at half strength, and continue the operation at intervals until the flowers are opening. In cases where the disease is known to have been troublesome previously the trees should be thoroughly syringed in the winter with a solution of sulphate of iron.

DESFONTAINEA SPINOSA AND PASSIFLORA: *Shrub.* Pot the plant of *Desfontainea spinosa* in a compost consisting of two-thirds fibrous loam and one-third peat, with enough sharp sand added to keep the texture open. Chop the loam and peat into small portions, but do not sift them. The two best *Passifloras* for outdoor cultivation are *P. caerulea*, the old light bluish Passion Flower, and *P. caerulea* var. *Constance Elliott*, a vigorous form with white flowers. *P. alata*-*caerulea* is assumed to be a hybrid between *P. alata* and *P. caerulea*, and is too tender for growing out-of-doors in this country. (You should read the recently published volume, *Climbing Plants*, by W. Watson, obtainable from our publishing department, price 2s. 9d. post free.)

FUNGUS: *A. J. L.* The fungus is *Russula adusta*—not uncommon in woods. It is not edible.

HAWTHORN SHOOTS: *J. C.* The injury is caused by the larvae of the Vapourer moth, which attacks many kinds of trees. Spray with an insecticide.

KNIPHOPIAS DISEASED: *B. L.* The symptoms described suggest the presence of eelworms at the roots of your *Kniphofias* (*Tritomas*). This will be confirmed if you find warts on the roots. Should this be the case remove the plants and sterilise the soil.

NAMES OF PLANTS: *Alfred Minns.* *Orobanche speciosa*.—*E. F.* 1, *Inula Thapsoides*; 2, *Lycasteria formosa*.—*R. F. F.* The scarlet flower is the Double Pomegranate (*Punica Granatum* var. *flore pleno*); the other is a species of *Clerodendron*.—*G. W. J. Rampton.* *Plectranthus fruticosus*.—*R. S., Hertford.* 1, *Rosa bracteata*; 2, *Aralia cordata*; 3, *Saponaria officinalis* var. *flore pleno*; 4, *Polygonum molle*; 5, send when in flower; 6, *Gypsophila Sanderiana*; 7, *Colutea cruenta*.

PEARS DEFORMED: *J. E. H.* There is no disease present. The tree is abnormal and should be replaced by a healthy one.

POINSETTIA LEAVES: *L. T. P.* There is no disease present. Stagnant water at the root is the cause of the diseased appearance.

POND WEED AND ROSES: *W. H. P.* The weed is *Elodea canadensis*, the Canadian pond weed. As there is no fish in the water and the pond can be easily emptied by draining, you should run off the water, rake up the weed, and burn it, then spray the bottom with the Bordeaux mixture. Do not refill the pond for a few days. Suitable Roses for your purpose are (red), Hugh Dickson, Richmond and Mrs. John Laing, (pink) Mme. Abel Chatenay and La France.

POTATOS DISEASED: *J. G. T.* Quicklime is useless for your purpose. It may be advisable to remove the haulm.

ROSE RUST: *J. B. N.* All that can be done to check the disease is to burn infested leaves and shoots and spray the plants with potassium sulphide.

SOIL FOR CARNATIONS: *C. E. P.* We do not undertake the analysis of soils. The compost is certainly not deficient in lime, for particles of lime are easily observable. We suspect that your trouble is due to some error in treatment rather than unsuitable soil. Send a plant for examination.

TOMATO BLISTER: *J. P. M., Dundee.* The feeding of the Tomato plants has been too strong. Some varieties suffer from blisters from this cause.

TRAINING THE LIME: *J. T. M.* In Italy and Switzerland Lime trees in streets are planted moderately close and pruned frequently. When planted to form alleys and covered walks the trees are planted 8 or 10 feet apart and the branches encouraged to develop longitudinally with the path, the branches facing the path and those directly opposite them being suppressed. When the side branches meet all secondary branches are spurred back once or twice a year. Usually the trees are pruned lightly at about the end of June and more severely in winter. Bars of wood or light iron are sometimes used to train the branches across the path, such supports being removed when the branches are strong enough to maintain the required position. The covering can thus be arched, pointed or allowed to become horizontal, according to taste. The annual pruning must be persisted in to keep the trees to the desired shape.

VINE ROOTS: *F. T.* Eelworms are causing the damage to the roots. Water with a solution of sulphate of potash once a week for a month.

VIOLET LEAVES: *J. G. T.* The Violet leaves appear to have been injured by some deleterious liquid.

Communications Received.—W. I.—H. P.—E. M.—R. H.—S. A.—Dr. A. H.—W. H. D.—A. C. B.—G. M. T.—W. W.—N. E. B.—A. O. H.—A. C. G.—W. H. W.—J. R. J.—W. T.—C. E. P.—F. W. G.—H. H.—A. T. H.—F. G. H.—B. H. S.—T. W.—W. T.—R. S.—Hertford—H. G. S.—Mrs. E. W.—Mrs. B. R.—O. E. D.—S. V. H.—X. Y.—Z.—G. W. J. Rampton—W. M.—W. K. P. L.—E. J., Twyford—F. R., Forest Row—Kersey, T. and Son—Chequers—D. M.—O. C.—F. E. M.—D.—F. N.—A. F.—C. C. R.—F. J.—S. M.—A. G.—C. J.—A. J. G.—H. G. W., Pennsylvania—G. S. R.—R. E., Canada—S. J. M.

THE Gardeners' Chronicle

No. 1501.—SATURDAY, OCTOBER 2, 1915.

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RADIUM AND PLANT GROWTH.

A LARGE company of horticultural and agricultural experts visited the Trial Grounds at Reading on Friday, September 24, in order to inspect the results of the experiments which, as our readers are aware, Mr. Martin H. F. Sutton has been conducting during the past two years on the effects of radium on plant growth. The subject is at once important economically and fascinating from a scientific point of view. There is no *a priori* impossibility that radium may not prove to have a potent influence on the growth of plants. We are so accustomed to accept the customary aspect, size and colour of our plants as representing the limit of their possible development that it requires a deliberate and vigorous effect of imagination to believe that in new circumstances these limits might be passed and with other conditions growth become vastly more rapid and more considerable—as in the enchanted land the piper piped of:—

"There, sparrows were brighter than peacocks here.

And dogs outran the fallow deer,
And horses were born with eagles' wings,
And honey-bees had lost their stings."

Bold claims have, indeed, been advanced on behalf of radium as an agent for accelerating and increasing plant growth. Those claims are, moreover, put forward by people whose opinion is worthy of serious consideration. Hence it is but natural that in these days of eager commerce many different kinds of radium fertilisers should have found their way on the market, and that gardeners should be asked to pay considerable sums for the materials for which such high fertilising qualities are claimed.

Gardeners and growers of all kinds are therefore deeply indebted to Mr. Martin

Sutton and his partners for undertaking the laborious task of testing the effects of different preparations of radium on all manner of garden crops. Everyone who visited the Reading Trial Grounds on Friday was impressed by the extent of the experiments and by the care which had been bestowed upon them. In some series the radium salts had been mixed with the soil, in others they were enclosed in vessels either of earthenware or glass, in order to allow only certain of the rays to penetrate into the soil. In no case was it apparent that any of the preparations of radium employed had a beneficial effect on the growth of the crops, and in not a few instances there were definite indications that the radium preparations had exercised an adverse influence on the plants. This was particularly striking in a series of trials with *Antirrhinum*. Those plants which had been exposed to radium had in almost every case a yellowish and dwarfed appearance, such as would be produced if they were grown in a soil poor in nitrogen. It certainly looked in this series as though exposure to radium rays and emanations had had a maleficent effect on the powers of the roots of the plants to absorb



FIG. 69.—*CAMPANULA ALLIONII* GROWING IN SOIL CONTAINING LIME (MARBLE).

nitrogen. We understand that there are different methods of extracting radium from its ores, and hence it may be that radium residues obtained from other sources may have, as is indeed claimed for them, beneficent effects. Pending, however, the demonstration of these effects we are bound to conclude from the first thoroughly comprehensive trials made in this country that the claims for radium as a stimulator of plant growth have not been established. As the Carrots, Onions, Spinach, Potatoes and other crops showed, a shillingworth of farmyard manure or ninepennyworth of a complete artificial fertiliser produced far better results than a nine-shilling dressing of radium fertiliser. On those who seek to sell these radium preparations to the gardener the onus lies to show either that Mr. Sutton's experiments are faulty, or that certain forms of radium residues not employed in the Reading experiments possess properties absent from those used at Reading.

In the meantime we shall continue to advise the employment of the manures which are known to be beneficial, and to deprecate the general use of radium fertilisers.

CAMPANULA ALLIONII: A CYPSOPHILOUS PLANT.

HAVING grown this plant without regard to a widespread statement that it was a "lime hater," it became of interest to see whether such was really the case; especially as in all innocence I had given a dressing of mortar rubble to a plant and the results suggested that carbonate of lime might be prejudicial. Mr. Arthur Hill kindly sent me a sample of the soil on which the plant was growing at Kew, and I obtained two other samples from friends; the report with the Monmouthshire sample stated that the plant was not doing well, and this being the highest of the four both in carbonate of lime and calcium extracted by acid, the plot thickened somewhat.

The analyses gave the following results:—

	Own.	Kew.	Hamp-shire.	Monmouth-shire.
Carbonates (as CaCO_3) ..	0.496	0.276	—	0.688
Calcium extracted by hot HCl standard method (as CaO) ..	1.36	1.89	0.8	2.40
Magnesium extd. ditto (as MgO) ..	0.58	0.58	0.3	0.84

It seemed that at any rate a certain amount of lime in the form of carbonate was tolerated by the plant, and also that the only way of getting at the true state of the case would be to collect soil from amongst the roots of the plant in its native habitat. Mr. Reginald Farrer kindly afforded help in this, and informed me where I could find the plant "*cito, tutè et jucundè*," and luckily the three adverbs were justified, as the war broke out three weeks later.

The plant was found growing on screens consisting of flat, shaley pieces, chiefly of small and portable size, though naturally larger rocks were interspersed. Some of the larger pieces showed white crystalline masses of carbonate of lime, which no doubt had been deposited by solution and infiltration. Siftings through 3mm. sieve gave:—

	Per cent.
Carbonates (as CaCO_3) ..	11.55
Potential alkalinity (48 hours' exposure to $\text{N}/1$ HCl) ..	
CaCO_3 ..	18.4
MgCO_3 (by difference) ..	1.58
Calcium (standard hot HCl) as CaO ..	18 to 19
Magnesium (ditto) as MgO ..	2.3
Potassium (ditto) as K_2O ..	0.66
Phosphoric acid (ditto) as P_2O_5 ..	0.17

It is clear that the plant likes a soil well neutralised by carbonates, of which plenty of carbonate of lime is by no means prejudicial.

After drying at 110°C ., exposure to dull, red heat only caused a loss of about 1 per cent. from the finer soil (1mm.), or about 0.2 per cent. from the whole soil collected, so that the organic constituents are small in amount.

Inasmuch as the "soil" mainly consists of stones, it would appear that good aëration should be favourable to the roots; the hot baking during daytime and the cool nights on the mountain heights must cause, as it were, a considerable respiratory interchange of air in the crevices and spaces in the soil.

A mechanical analysis of about 1.25 kilo. showed that only a third of the soil collected (i.e., not including large unportable stones), would pass the 3mm. sieve.

	Per cent.
Stones and gravel ..	61.6
Fine gravel ..	14.31
Sand ..	5.22
Fine sand ..	2.23
Silt ..	2.43
Fine silt ..	2.09
Clay ..	0.47
Soluble ..	5.36
Volatile, etc. ..	0.51

Without the orthodox preliminary treatment with acid, the clay fraction would disappear, as nothing remained suspended after 24 hours in

plain water. The acid treatment seems to destroy a proper view of the mechanical constitution of a soil as it is. Rather would it seem better to gauge the effect of adding lime or its carbonate to lime-poor soils.

Before analyses could be carried out it was needful to accommodate home-brought plants, and one was put in a scree-like compost of broken and powdered white marble (rather ominously obtained from a tombstone maker!), with a modicum of rotted leaf-mould and mica; after nearly one year's sojourn in these surroundings the plant looks vigorous, and consented to blossom, as will be seen in the photograph (see fig. 69). The slightly untoward effect

ing from the main roots we followed on the mountainside for a yard or more without reaching the end, plenty of root-run would seem to be indicated.

When we speak of a soil containing lime, we usually mean that it contains carbonate of lime, for which we have no simple word except chalk, and this is quite specialised. In the carbonate sense, it is unfortunate that the word "calcifuge" should have become introduced when rather "cretafuge" or "cretifuge" is really meant. Calcifuge is at best an ugly word; why should it not be replaced with the help of the Greek *γύψος* (=chalk), whence we can coin the two more palatable words, "gypsophobe" and

NEW OR NOTEWORTHY PLANTS.

ROSA FLORIBUNDA.*

AMONG the interesting Roses introduced from China by Mr. E. H. Wilson is a fine species of the *R. moschata* group, which was exhibited at the R.H.S. meeting held on June 22 last by Messrs. Paul and Son, Cheshunt, under the provisional name of *R. moschata maculata* (see fig. 70). It was described as "a small white cluster Rose, with foliage like a Tea variety, the leaves being reddish beneath, prominently serrated, and with long points. The flowers are about an inch in diameter. We understand that the species has not yet been determined" (*supra*, p. 11). Ample material has since been received from Messrs. Paul, and it proves to be identical with *R. floribunda*, Baker, one of the introductions of Mr. E. H. Wilson's third expedition to South-Western China. It was described from a plant which flowered in Miss Willmott's garden at Great Warley, in June, 1912. It was remarked: "This plant in its way is, perhaps, the most beautiful Rose yet introduced. Its cascades of pure white flowers are borne in boundless profusion, and unless damaged by storms will continue in blossom for nearly two months. It should be given an isolated position, where it can be left to develop, and where its beauty can be seen to best advantage. It forms fine bushes of dense growth, and so far has not been attacked by mildew or fly. Near *R. moschata*, Herrm." A reference to the original specimen, preserved at Kew, shows that the species was based upon No. 431 of Wilson's collection, a plant of which has flowered profusely in the bed at Kew during the present summer, and at the present time it is covered with numerous clusters of orange-red fruit, these being ellipsoidal in shape, slightly glandular, and about half an inch long. The peduncles are strongly glandular, and the stems bear a number of strong recurved prickles, which are purplish when young. The leaflets are five to seven in number, simply serrate, glabrous, decidedly suffused with purple when young, and dark green when mature. Other characters are well shown in the illustration, which is less than half natural size. The species belongs to the *R. moschata* group and may fairly be regarded as the Chinese representative of the Himalayan *R. Brunonis*, Lindl. *R. A. Rolfe*.

KEW NOTES.

HYDRANGEA PANICULATA.

This Japanese *Hydrangea* forms a large shrub 10 feet or more in height, and flowers in September. Specimens are very effective just now. To secure large inflorescences fairly hard pruning of the previous season's shoots is necessary in March, followed later by a considerable thinning of the young growths. The variety *grandiflora*, a popular plant for greenhouse decoration in pots, flowers a month earlier in the open air than the type.

SINGLE CHINA ASTERS.

THE value of *Callistephus hortensis* (*chinensis*) for the pleasure grounds is well illustrated in the Oak and *Pyrus* collections. To repair several grass avenues a considerable quantity of turf was removed from among a collection of young Oak trees near the river in early spring. Instead of sowing the ground cleared with grass seeds, it was dug over during the first half of April and sown with seeds of the Single China Aster. This operation served a two-fold purpose, the young Oaks benefited by the cultivation of the ground, and at this season when very few trees and shrubs are in flower the Asters furnish a wealth of colour, mostly purple

* *Rosa floribunda*, Baker, in Willmott, *The Genus Rosa* p. 513.



FIG. 70.—ROSA FLORIBUNDA, A NEW SPECIES FROM CHINA: FLOWERS WHITE.

of top-dressing with mortar rubble, which was noted above, must, I think, be ascribed to the want of enough stones and chips in the fore part of the pocket in the rockery, for all about the rocks at the back the plant luxuriates and blossoms freely. Another plant, in a 3-inch pot, which was sunk in rather heavy loamy clay, is growing well and blossoms freely, having sent its roots out into the soil about, where it finds not its native screes; for close by, the soil of my garden gives silt, fine silt and clay respectively 18, 22 and 7 per cent. of whole soil (3.7 kilo. sample). On the whole it seems a fairly accommodating plant, and judg-

"gypsophil"—for those that hate and those that love the carbonate.

As the word lime is used more or less as an equivalent to calcium, and as it is clear that at any rate many "calcifuges" show the presence of calx in their cremated substance, it is well to distinguish the effect of calcium when combined with silica, phosphoric acid, and still more with organic acids, as in rotted leaves, from that in the form of carbonate.

This year I had hoped to make enquiry into the home habits of *Campanula pulla*, which has some waywardnesses, but that hope is veritably exploded for the nonce. *H. E. Durham*.

shades, with a few pink and white interspersed. The single varieties have several advantages over the doubles, the most important being that they are less formal and appear in perfect harmony with their more or less natural surroundings. Other important considerations are that the seeds may be sown where the plants are to flower, and they produce quantities of seeds, self-sown seedlings being common. A little thinning and transplanting of the seedlings were necessary, but whilst transplanted seedlings are satisfactory, plants left undisturbed are superior.

KNIPHOFIAS.

THE season now drawing to a close has apparently suited Kniphofias, for in the borders, beds in the flower garden, and on the slopes of the lake-side the plants have produced a wealth of colour. Those by the lake, viewed at a distance, either across the lake itself or along the wide grass avenues, give large masses of vivid colouring. The following details should be observed in the cultivation of these plants. Divide the rootstocks when necessary during April; let the loamy soil be light rather than heavy, and well drained; mulch with manure in summer, and give ample supplies of water from June to August in dry weather. At Kew the variety *Saundersii* is very satisfactory, producing a profusion of tall flower-spikes.

A NEW CHINESE WILLOW.

AMONGST the newer trees in the gardens is *Salix Bockii*, a species introduced by Mr. E. H. Wilson from China. It forms a dwarf spreading bush up to some 3 feet or 4 feet in height, with small, dark-green leaves, and attractive catkins in autumn. Like nearly all the Willows, *S. Bockii* is dioecious, the male, according to Mr. Wilson, being the more ornamental plant when in flower, though the catkins are shorter. Cuttings and layers form a ready means of increasing the plant, which is perfectly hardy. A. O.

ORCHID NOTES AND CLEANINGS.

NEW HYBRIDS FROM WESTONBIRT.

FLOWERS of ten very pretty novelties are received from Mr. H. G. Alexander, Orchid-grower to Lieut.-Col. Sir Geo. L. Holford, K.C.V.O., as follows:—

LAELIO-CATTLEYA SARGON (L.-C. *Lustre* × C. *Hardyana*).—A handsome flower, 7 inches across, with petals 2½ inches wide. L.-C. *Lustre* (L.-C. *callistoglossa* × C. *Luddemanniana*) is enlarged, the flower taking the form of C. *Warszewiczii*, with the gold lines at the base of the lip inherited from C. *Dowiana aurea*. The sepals and petals are rosy-mauve; the lip broad and finely crimped, of deep ruby-red colour, darker in the centre than at the margin.

LAELIO-CATTLEYA ZENITH (C. *Mendelii* × L.-C. *Ingramii*).—The flower shows most influence of C. *Mendelii* in form and colour, the tubular lip and its ridges in *Laelia Dayana*, which, with C. *Dowiana*, produced L.-C. *Ingramii*, being quite suppressed. The sepals and petals are white with a slight rose shade; the lip is purple in front, the crimped side lobes being white with yellow lines at the base. The flower resembles *Cattleya Octave Doin* in many respects.

LAELIO-CATTLEYA COLUMBUS (L. *Jongheana* × L.-C. *Dominiana*).—A very bright flower of fine substance, in which the *Cattleya Dowiana* in L.-C. *Dominiana* is successful in expanding the narrow form of L. *Jongheana*. The colour of flower is bright purplish-rose with rich orange base and centre to the lip.

LAELIO-CATTLEYA FULVA (L.-C. *Golden Oriole* × C. *fulvescens*).—C. *Dowiana* enters three times into the composition of this pretty hybrid and its features are easily seen, but the influence of that distinct species C. *Forbesii*, which, with C. *Dowiana*, created C. *fulvescens*, is strong in the form of the lip. The sepals and petals are pale buff coloured, with a slight rose veining.

The lip is ruby-crimson with yellow lines running into the centre.

CATTLEYA AMIEL (*Dusseldorfei* × *fulvescens*).—In this hybrid the form and marking on the lip is after the *Cattleya fulvescens* parent, but the influence of C. *Dowiana* greatly enlarges the flower and shows in the colour. The sepals and petals are light rosy-lilac colour; the lip wavy at the edge, elongated and recurved at the tip; veined and tinged with bright rose-purple, the yellow disc having a network of purple dotted lines.

CATTLEYA JUDAH (Lord Rothschild × *Hardyana*).—This derivative of *Cattleya Dowiana* twice, C. *Warszewiczii*, and C. *Gaskelliana* has a well-formed and finely coloured flower; a desirable variation, retaining the good qualities of its ancestry.

CATTLEYA RABBI (Lord Rothschild × *Luddemanniana*).—C. *Luddemanniana* (*speciosissima*) invariably tends to increase the size of its hybrids, and that peculiarity is in evidence in the present case, the petals being nearly 8 inches across. Otherwise the flower resembles one of the best forms of C. Lord Rothschild. The sepals and petals are light lilac with a silver-white central line at the base, the lip being reddish-purple in front with yellow patches on each side of the centre and gold lines on purple at the base.

SOPHRO-LAELIO-CATTLEYA PROSPERO (C. Lord Rothschild × S.-L.-C. *Danae*).—A pretty hybrid, large for a *Sophrontis* cross, with little trace of that species. The sepals and petals are deep rose colour; the lip is yellowish-white with chrome-yellow centre and purple apex. The white, fleshy column is decorated with a red spot on the tip, and there are smaller spots on the sides.

LAELIO-CATTLEYA CYRUS (*Laelia Gwennie* × C. *Mossiae Reineckiana*).—A three-flowered inflorescence, showing *Laelia Jongheana*, acquired through L. *Gwennie* (*Cowanii* × *Jongheana*) plain in the fine yellow of the lip.

CATTLEYA ZENOBIA (*Warszewiczii* × *Whitei*).—Flowers purplish-rose with ruby-purple lip and yellow disc.

TREES AND SHRUBS.

FORMING NEW PLANTATIONS.

BEFORE commencing actual planting operations, several preliminaries must be attended to. These will include (1) laying out the boundary, (2) clearing the ground of all rough-growing vegetation, (3) drainage where necessary, (4) fencing, and (5) laying out such roads as may be necessary for the most efficient working of the plantation.

Many considerations will tend to determine the position of boundaries, such as bounds of property, proximity to roads or public paths, and, most important of all from a financial point of view, the existence or future probability of modes of transit of the woodland produce. Considerable taste and judgment are required on deciding the outline of a plantation, and a combination of the beautiful and useful should never be lost sight of, as, without in the least detracting from the value of the wood in a commercial sense, charming effects may be produced by a little forethought and knowledge of the requirements of the trees to be planted.

The boundary line should also be laid out with due regard to the prevailing wind of the district, and must always present a convex side towards it, as it is obvious that on striking such a curve the force of the wind would be divided and expend itself in two opposite directions, thereby losing much of its destructive force. Blending one curve with another should be observed, and continuous straight lines avoided, not only for appearance' sake, but as it is well known that the most destructive force of the wind concentrates on such outlines. Boundaries should in some cases, particularly on high, exposed

ground, be laid out with a due regard to the shelter to be afforded to cultivated land in the district.

Local circumstances will sometimes go far in deciding the class of fencing to be adopted. Probably, where stones are abundant, it may be wise economy to form a wall as boundary to the plantation, and this not only acts as a fence, but affords excellent shelter as well. Then there is the ditch and quick hedge, and the wood and wire fence, which are usually erected by the estate workmen. But cheapest and most efficient of all is iron and wire fencing, of which many kinds are now supplied for the purpose. Generally, the fence is 3½ or 4 feet high, with seven-strand wires, and is erected at a fixed price per yard by the makers. To recommend any particular type of fencing would be invidious, for amongst the numerous kinds now on the market any desired pattern can be readily and cheaply obtained.

Clearing the Ground.—Coarse-growing herbage, which often includes Heath, Gorse, and rough grasses, that would interfere with planting operations, should be removed, but not indiscriminately, as it may prove of inestimable value under certain conditions. On exposed and high-lying ground, the Heath and grasses will prove of great advantage to the young trees, and usually they are not too luxuriant or apt to cause damage at high altitudes. Where, however, the growth of such shrubs or grasses would be detrimental to the young trees, by all means have them removed. The best way is either to cut them over or grub out by the root, and burn on the ground. During a continuance of dry weather it may be possible to burn without either cutting or uprooting, but, generally speaking, removal of the roots is to be encouraged.

Drainage and Laying Out the Roads.—From a practical point of view these operations may go hand-in-hand. Certainly a most important item in the formation of a plantation is efficient drainage or the removing of stagnant water. Every part of the ground may not require drainage, and in many cases straightening and cleaning out existing water courses will be all that is necessary. Where, however, stagnant moisture, which would likely affect the health of the young trees, is present, it should be removed, and in doing so every fall of the ground should be taken advantage of. In commencing drainage, the position of the main outlet should first be determined, every fall of the ground being utilised. It is impossible to lay down rules as to the number, size, and distance apart at which the various minor ditches are to be placed, these points being only determinable when the nature of the soil, lie of the ground, and rainfall have been carefully considered. The main drain may be 3 feet deep, 2½ feet to 3 feet wide at top, and a foot at bottom. The minor drains, which should never be placed at right angles to the main, but at an angle of, say, 45°, to prevent them from becoming choked in exceptionally wet weather, may be 2 feet deep, 2½ feet wide at top, and the width of the draining spade at bottom.

Woodland roads are necessary for general access to the plantation when work is being carried out, for the removal of timber and firewood, and for sporting purposes. They should be formed before planting operations are taken in hand, and need neither be of an elaborate character nor attended with great expense in the making. According to the size of the woodland, so should the roads be arranged, and, as before stated, considerable saving is effected by laying out the roads and leaving them unplanted. Usually they are 30 feet wide and only require to have the surface levelled and a ditch cut along each side, this latter assisting materially in keeping the surface firm and dry. For various reasons, steep roads should be avoided by following in quickly sloping woodlands the general lie of the ground.

A. D. Webster.

(To be concluded.)

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLVII).

PRODUCTION DE LÉGUMES EN TEMPS DE GUERRE.

Les locaux de la Société Royale d'Horticulture, Vincent Square, abritaient, la semaine dernière, une exposition très intéressante de légumes. Il avait été fait appel, dès l'hiver, aux petits amateurs, bourgeois et ouvriers, qui, en temps de guerre, ont un intérêt considérable à produire eux-mêmes les denrées alimentaires qui leur sont nécessaires. Il est incontestable que l'exploitation rationnelle des milliers de petits jardins dispersés dans les faubourgs des grandes villes peut, tout en améliorant l'alimentation des classes inférieures, diminuer dans une mesure notable la quantité de produits requis de l'extérieur.

L'exposition comptait des concours pour neuf, six, quatre et trois espèces de légumes. Les plus intéressants étaient à nos yeux les deux derniers, réservés aux amateurs exploitant eux-mêmes leur jardin ou n'ayant recours qu'à l'aide occasionnelle. Là où l'on emploie des jardiniers de profession, les cultures sont généralement conduites de façon satisfaisante; le petit bourgeois ou l'ouvrier qui ne dispose que de 50 ou 100 m² de terrain, les laisse souvent improductifs et c'est l'utilisation de ce lopin qu'il faut tâcher d'assurer.

En ce qui concerne la réponse faite à l'appel des organisateurs, l'exposition fut certainement un grand succès; on assure que plus de 20,000 concurrents y participèrent.

La tâche du jury avait été facilitée par l'obligation imposée aux exposants de s'en tenir à des légumes déterminés, en nombre assez limité, et qui étaient sensés les plus indispensables. Cette dernière considération justifiait aussi le maximum de points différent d'après les espèces. Mais elle était moins heureuse en ce sens qu'elle tendait encore à restreindre le choix des légumes déjà si limité en Angleterre. Les légumes verts, à part le Céleri et le Poireau, faisaient à peu près complètement défaut et, chose curieuse, on n'y remarquait guère de Choux (exception faite pour les Choux-fleurs). Peut-être a-t-on obéi à la nécessité de produire des légumes de longue garde dont toute la production est utilisable. Mais peut-être aussi a-t-il fallu éviter que des légumes se flétrissant rapidement, ne déparent l'exposition le second et le troisième jour, et dans ce cas ce serait regrettable au point de vue du résultat à obtenir. D'aucuns ont aussi regretté le manque de fleurs et de plantes pour la décoration de la salle, ce qui, il est vrai, ne nuit pas au succès technique d'une exposition. Il est possible que la disposition d'un local moins étendu que celui qui avait été prévu primitivement ait rendu nécessaire une emprise sur le côté décoratif du local, qu'une succession interminable de caisses uniformes rendait assez monotone. A part cela, on y trouvait des légumes de qualité, ce qui n'est pas étonnant étant donné le petit nombre d'exemplaires à présenter et l'importance des prix à distribuer. Dans chaque classe les amateurs pouvaient se disputer des prix de 100, 25, 20, 15, 10 et 5 livres; ce sont là des primes non à dédaigner. Nul doute aussi que l'exposition aura singulièrement stimulé l'ardeur de ceux auxquels leur expérience antérieure laissait entrevoir une chance de succès.

Nous nous sommes demandé pendant si ces expositions monstres constituent bien le meilleur moyen pour étendre la production de légumes. A notre sens, l'organisation locale, cercle horticole disposant de quelques ressources pour distribuer des semences, pour faire donner des leçons démonstratives suivies d'un concours de

jardins et non de produits, donne des résultats bien supérieurs. Ce n'est pas de la critique, car nous croyons qu'une organisation centrale comme celle qui présida aux destinées de l'exposition n'eût pu faire ce que nous suggérons, cependant, ce qu'il faut, ce n'est pas produire quelques beaux légumes, mais cultiver tout ce qui est nécessaire dans le ménage, faire produire au sol—et à l'emplacement—ce qui lui convient et le faire de la façon la plus intensive, en assurant une succession ininterrompue de produits; en un mot, le meilleur concurrent est celui qui, en égard aux circonstances dans lesquelles il se trouve, tire de son terrain le meilleur parti. Dans les concours de produits, aucune distinction n'est faite entre ceux qui opèrent dans un milieu favorable ou défavorable, entre ceux qui ont quelques beaux spécimens de légumes et ceux dont toute la récolte est excellente, ou encore entre ceux qui cultivent quelques espèces et ceux dont le jardin fournit des légumes pendant une grande partie de l'année, et nous craignons que dans ces conditions ceux qui font la besogne la plus utile ne soient sacrifiés.

Il est vrai qu'on prévoit la visite des jardins appartenant aux concurrents heureux, mais c'est apparemment dans l'unique but de s'assurer que les produits primés appartiennent bien à l'exposant, et il sera difficile de démontrer que celui qui a dans son jardin des Oignons de 5 cm. de diamètre n'en a pas produit de 12 ou de 15.

NOUVELLES DIVERSES.

AU CHAMP D'HONNEUR.—Nous apprenons avec un vif regret, la mort, au champ d'honneur, de notre ami, l'avocat Em. Dieudonné, du 10^{me} de ligne belge, et de l'ingénieur agronome J. B. Coupin, officier au 3^e Régiment de Tirailleurs algériens. M. Dieudonné était fils du docteur-bourgmestre et viticulteur d'Over-Yssche. Il fut tué à la défense de l'Yser, entre le 1^{er} et le 10 janvier dernier, mais la nouvelle certaine de sa mort vient seulement de nous parvenir. M. Coupin fut chef du service des plantations de la ville de Tunis, et possédait l'important établissement d'horticulture de Bab Saadoun, en Tunisie.

PARIS MALGRÉ LA GUERRE.—M. H. Correvon publie, dans le *Journal de la Société d'Horticulture de Genève* (septembre, 1915), une note sur "Paris malgré la guerre," dans laquelle il constate que, même cette année, les décorations générales de la capitale sont très belles. Aux Champs-Élysées, par exemple, "rien n'a été négligé pour donner l'impression de gaieté et de joie qu'il convient de donner à ce quartier consacré aux soins des blessés. On a garni les corbeilles d'une façon, non point brillante, ce qui eût pu choquer l'esprit public, mais très doucement agréable à l'œil." Plus loin il admire la nouvelle décoration du Caroussel qui, dit-il, est absolument délicieuse bien que l'harmonie des teintes, rose et bleue, ne soit pas très heureuse. L'immense cour intérieure disparaît sous les fleurs et c'est un spectacle merveilleux. "Une autre observation que l'on peut faire, c'est que, depuis quelques années, les plantes vivaces prennent dans les jardins publics de Paris, une place de plus en plus importante." A. M.

LES HORTICULTEURS INTERNÉS EN HOLLANDE.—Les autorités militaires permettent, sous certaines conditions, aux industriels néerlandais de recourir à l'aide des militaires belges prisonniers dans le pays. Il faut notamment que les internés puissent être conduits à la fabrique en groupe et sous la garde d'un corps

militaire. La pénurie de main-d'œuvre dans les centres horticoles a fait songer les maraîchers à recourir également aux ouvriers qualifiés qui se trouvent dans les camps d'internement. Le peu d'importance des établissements et la variété du travail complique la surveillance, néanmoins on espère que bientôt quelques équipes d'internés seront à l'œuvre dans le Westland. De leur côté, les intellectuels ne restent pas inactifs. Il y a à Zeist un grand nombre de professeurs, d'étudiants et de jeunes amateurs agricoles et horticoles. Ils ont, en vue de remédier aux ennuis et aux regrets des longues heures de captivité, créé une section de perfectionnement. Des professeurs d'université et des conférenciers, internés eux-mêmes, y donnent des cours réguliers qui sont suivis par 250 à 300 soldats. Malheureusement, il leur manque du matériel d'enseignement: des livres, des tableaux et d'autres objets permettant aux professeurs d'appuyer leurs leçons de démonstrations pratiques. Les personnes qui disposeraient de quelques-uns des objets désirés, rendraient grand service à cette œuvre si intéressante en les faisant parvenir à M. le Professeur V. Antoine, de l'Université de Louvain, soldat interné du 14^e de ligne, Compagnie des Étudiants, à Harderwijk (Hollande).

LA RESTAURATION DE LA BELGIQUE.—M. Helleputte, Ministre de l'Agriculture et des Travaux Publics de Belgique, vient d'adresser au Roi Albert un rapport sur la reconstruction des communes belges détruites au cours de la guerre. M. Helleputte rend hommage aux nombreuses initiatives qui se sont fait jour en vue d'assurer la reconstruction, mais aussi longtemps que le territoire n'est pas évacué il faut se borner à des abris provisoires. Plus tard la restauration devra être intégrale. Il n'est pas nécessaire à la Belgique de conserver ses ruines pour qu'elle puisse se souvenir de ses malheurs, et le Ministre soumet à l'approbation royale un projet d'arrêté-loi qui permettra au gouvernement d'imposer des règlements de bâtisse réalisant les exigences légitimes qu'ont fait naître la connaissance plus approfondie des lois de l'hygiène, le développement des modes nouvelles de transport et le souci plus intense de respecter les lois de l'esthétique.

KORT OVERZICHT VOOR DE VLAMINGEN.

VERLEDEN week had in Londen een druk-bezochte tentoonstelling van groenten plaats waaraan, zegt men, niet minder dan 20,000 kwekers deelnamen. Men had vooral den oproep gericht tot de kleine liefhebbers, met het oog op het nitbreiden der voortbrengst, zoo wenschelijk in oorlogstijd.

Er waren prijzen tot van 100 pond en dan ook schoone groenten. Misschien echter dat te veel meer uitbreiding zou nemen in geval men prijskampen voor wel bewerkte kleine tuinen, in plaats van voor eenige groenten, inrichtte.

M. Helleputte heeft aan den koning een wetsvoorstel onderworpen de voorwaarden regelen waarin de vernielde steden en dorpen moeten heropgebouwd worden.

Men heeft voetstappen aangewend opdat de tuinbouwers en hoveniers in Holland gevangen, op de Nederlandsche kwekerijen zouden kunnen gebruikt worden.

Ten einde wat nut te trekken uit hun verplicht verblijf aldaar, hebben de gevangenen cursussen over land- en tuinbouw ingericht onder bestuur van hoogschooleelaars en voordrachtgevers; 250 tot 300 soldaten zijn er geregeld op aanwezig.

FLORISTS' FLOWERS.

KEEPING CHRYSANTHEMUM BLOOMS.

THE outer petals of certain varieties of Chrysanthemums hang a little limp soon after the blooms are cut and fail to revive when the stalks are put in water. To the florist this is a matter of importance, for the impression is that such blooms are not fresh. Beech is a variety most prone to this evil, and the freshness can be restored only in certain conditions, which may be given as follows:—If in the evening the blooms are limp, line a large market box, such as is used by Chrysanthemum growers, and pack the flowers as nearly as possible as they were when received from the market. Spray the foliage well, taking great care not to damp the petals, which is particularly necessary in the case of white varieties, as white flowers show bruises very readily. Next fold a few sheets of tissue or newspaper, pass the paper through a bucket of clean water, and then place it across the stems and foliage. Keep the box in a cool place until the following morning, when the blooms will be restored to their natural freshness. The cause of the trouble is over-ripened wood and dry atmospheric conditions. It will be found that the moisture will be assisted to reach the petals by the horizontal position, for it could not rise to the flower when the stems are arranged upright. Another method of freshening the blooms is to break the ends of the stalks and place them well over all the foliage in a deep vase or bucket filled with fresh-drawn water. Selecting the flowers at the proper stage for cutting is also an important detail; it can be ascertained by inspecting the centre whether a bloom is at its best or deteriorating. The centre should be closed and hard, with quite half an inch across the unopened portion. Colour also is a safe guide, as in the case of many other kinds of flowers. The first sign of colour is often misleading: a pale pink bud may often open pure white, as in the case of *Roi des Blancs*, the finest and best keeping of all bush Chrysanthemums. Each variety has its own peculiarities. Flowers last longer in cool drawing-rooms than in florists' shops, as the power of glass brings the blooms to a premature development. *L. C.*

PERPETUAL-FLOWERING CARNATIONS.

PROBABLY no plant is so diversely treated as the Perpetual-flowering Carnation. There are some who propagate the plant in the autumn, and others who only renew their stock in the spring. Again, some rely upon one series of plants to meet all demands, others have a succession. There are also those who ventilate with a caution which others who believe the Carnation to be a lover of fresh air regard as misplaced, and there is also a divergence of opinion with respect to the temperature in which the plants should be grown. Each person doubtless has a reason for his system, and at that we must leave it.

By the system I pursue I do not obtain everything, but as it yields a plentiful supply of good blooms throughout the year, and is not attended by debility or disease in the plants, I am well satisfied with it. I propagate, if possible, in October and November, and to secure the development of roots quickly the cuttings are given stove treatment, with saturation of the sand in which they are inserted. The shortest space in which roots have been produced thus is eight days, but a fortnight may be taken as the average time. Those who root the cuttings in cool conditions do so under the impression that the young plants are weakened by the heat and moisture of the first method, but it is not so. There is little to remark about the cuttings. Moderately strong shoots are best, and it is not important, as some believe, to take them with a heel, cuttings that root in the short-

est time being those which are trimmed below a joint. Where a large number is propagated at one time insertion in a sand bed saves much time, but three cuttings in a thumb-pot is, on the whole, a handier way. When sand alone is employed for the rooting medium it should be saturated with hot water some time before inserting the cuttings, to allow it to become sufficiently firm to hold the cuttings upright on insertion. The proper consistency is arrived at when the cutting can be pushed into the sand and remain fixed. No time should be lost once the cutting is seen to have produced roots in transferring it to a thumb-pot, using a sandy, open compost at the start, and keeping the plant for a short time in the same house in which it was rooted. After this stage we find another divergence of opinion. Some growers for a long time give the young plants intermediate treatment. I am sure there is no ultimate gain in doing so. The Perpetual Carnation is just as hardy as the border type of the flower, and once the young plant has become partly established it is much better to grow it in cool conditions. It is true the progress will be slow until the succeeding March or April, but with the lengthening days the cool-grown plant will overhaul the other, and finally become the



FIG. 71.—ABNORMAL GROWTH OF A CARROT.

better specimen. Another important expedient is that of stopping. I have seen plants stopped when quite small, with the result that only three or four breaks followed, and these were weak. It seems, on the surface, to be a great waste of time and of the energy of the plant, to delay stopping till 16 to a score of leaves have been made, and then to remove the greater number of these, but the results prove this to be the better method. The strength which the plant has in the meantime been gaining is not lost, but is expended in the production of the maximum number of shoots close to its base, and these strong and forceful, and of a character that makes a rapid second stop sure and equally prolific of strong breaks. I have nothing to say of composts, for one has just to make the best of the material at command. What is very important in pot culture is to see that repotting is never delayed once the roots require more space, the stronger varieties being finally planted in eight-inch and the weaker in seven-inch pots. Some soils are so rich in food fitted for the Carnation that the application of manure in water or as a surface dressing is

seldom called for. In other cases, manurial applications are important aids. Only, much judgment is required to gauge proportions and to know when to apply and when to withhold stimulants. Much mischief, no doubt, follows from manuring in winter. The petals of the flowers are thereby rendered flabby, and the calyces split in a manner that no up-to-date variety should do when treated properly. Much harm, too, results in free-growing varieties being permitted to retain every shoot that is formed after the flowering period has commenced. Only a small proportion of these should be left to mature. They will be very considerably strengthened by the removal of the superfluous ones, and the resulting flowers, of course, will be finer. Whether it is essential to apply heat constantly during the winter months requires consideration. In one house I find that the plants can be safely left till well into December without resorting to the use of fire-heat. In another the plants are certainly advantaged by using heat for a longer period, the pipes being just warmed, and it does the plants no harm to allow the temperature to drop below 40° during cold spells: indeed, it is better than having to apply more heat, which is certainly weakening. But heat must be applied with the proviso that ventilation must accompany it. The flowers do not open kindly in a low temperature, while a slight warmth, so long as there is fresh air, causes the petals to expand well. The usual Carnation pest with me is aphid, which is easily kept in check by means of nicotine fumigation. A few varieties in spring are subject to rust disease, which yields to treatment, one or two washings with Gishurst Compound being sufficient. One other important detail is that in repotting the stem should on no account be below the surface. A Carnation will not die because the stem is higher from the soil than it need be, but there are certain to be losses when deep potting is practised. Take, then, the happy medium. *B.*

ABNORMAL GROWTH OF A CARROT.

THE interesting root of Carrot illustrated in fig. 71 is sent to us by Dr. Daydon Jackson, secretary of the Linnean Society, who received it from Mr. Radford, of Lowestoft. It will be observed that the root has grown into four separate parts, which have become interlaced so as to form a plaited growth. In the issue for October 12, 1912 (p. 287, fig. 128), a somewhat similar growth was illustrated, but in this case two roots twisting on each other formed a complete spiral. Darwin, in *Movements of Plants* (p. 169), gives instances of twisting which have occurred in consequence of the curvatures of the growing roots away from obstructions. He states that the growing point begins to gyrate as soon as it emerges from the seed-coat, and being extremely sensitive it turns aside from any obstruction which prevents it from easily piercing the soil. This theory has been borne out by experiments in which, by means of such obstructions, roots have been induced to curve in continuous spirals.

FOREIGN CORRESPONDENCE.

NOTE FROM JAVA.

CULTURAL EXPERIMENTS.—I received a number of letters in reference to my remarks on p. 21 in the issue for July 10, and I should be very glad if I could think that the interest thus shown would later bear fruit in the institution of experiment stations for plant acclimatisation in the tropics. Here I work in very difficult conditions and on a very small scale, but I have made a number of notes during the eight years I have spent in Java. One of the plants which

I have acclimatised is *Mentha piperita*, indigenous, according to the *Index Kewensis*, to Europe, North Asia and North Africa. The plant is cultivated all over the tropics, but, as is the case here, it does not flower, whether grown in pots or in the open. It would be interesting to ascertain the limit of latitude in which the flowers will develop, north and south of the equator. The plant grows well in Australia, and I assume that it is the high temperature here which prevents its flowering. The mean temperature for the whole year is 66°, the maximum being 82° and the minimum 48°; the elevation above sea level is 1,230 metres. Frost never occurs. The climate has altered considerably in the past eight years: during the first four years there were only from four to twenty dry days in each year, while in 1914 there were 150 rainless days. *M. Buysman, Lawang, East Java.*

NOTICES OF BOOKS.

PLANT LIFE.*

It has long been a matter for surprise that some botanist has not arisen who, having served the long and necessarily arduous apprenticeship in the laboratory, should come out into the sunlight and tell us in plain speech the story of plant life as it has been revealed to men of science during the past fifty years. The student has his textbooks in plenty; solid fare for the most part, but forbidding enough fruit to the untrained. Botanical science is becoming overlaid with detail, and this branch of the tree of knowledge requires a very severe pruning.

What is badly wanted, indeed, is for some botanist to do for the modern science what Huxley did for physiology a generation ago. The work might be done by a young enthusiast or by a wise old man; but we think that there is most chance for the latter, for he would be likely to be less trammelled by detail. Such a work would be of the greatest value to gardeners and those who care for plants. It should enable them to see how the plant machinery works and how it is built. It would present a splendid pageant of plant life, and it would incidentally throw the light of reason on much practice which is at present empirical.

An attempt to do these things has been made by Mr. Charles A. Hall in his work entitled *Plant Life*, and the attempt is in a large measure successful. Mr. Hall gives a lucid account of the different kinds of plants now living on the earth, and also a summary of the floras of past epochs. Beginning with the simplest forms—the algae and fungi—he describes the life-histories of the progressively higher forms, liverworts, mosses, Ferns, etc. The reader who will peruse these pages with attention will have a very fair idea of the different measures of complexity to be found in the several divisions of the vegetable kingdom.

Having traced the lines of evolution of the plant up to the flowering plants of the present day, the author gives a series of well-written chapters on sundry aspects of plant life, dealing with such phenomena as respiration, assimilation, pollination, carnivorous plants and the like. We think that he might have tackled the difficult subject of classification of flowering plants with a firmer hand, for if we are not mistaken there is a large public at the present day consisting of well-educated men and women who are willing to read scientific works studiously, and who would be glad to have some good guide to the genera of commonly-grown garden plants. At the same time it must be admitted that Mr. Hall covers an enormous field in these 380 pages, and covers it well. The coloured illustrations are excellent, and the text admirable. The book deserves and will have a wide circle of readers.

* *Plant Life*. By Charles A. Hall, F.R.M.S., with 74 full-page illustrations (50 in colour). (A. & C. Black, Ltd., London.) 20s. net.

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

ROOT-PRUNING.—The work of root-pruning or lifting and replanting trees that have become unfruitful through the development of too much growth may shortly be commenced. The simple operation of lifting and replanting young trees that have shown too much vigour is, as a rule, all that is necessary to induce fruitfulness. The addition of fresh soil to the roots of young fruit trees is seldom necessary, but it is decidedly beneficial to older and larger trees. Turfy loam, roughly chopped and mixed with liberal sprinklings of lime-rubble, wood-ash, and half-inch bones, may be employed. In pruning the roots, shorten severely those that grow downward, but preserve intact all fibrous ones, and encourage them to grow near the surface. In filling the hole or trench after the roots have been pruned, make the soil firm over each successive layer. When the work is finished, water the soil freely, and apply a surface dressing of half-decayed manure. Standard trees should be staked and tied securely, to prevent the roots from becoming disturbed in the ground by swaying caused by high winds. Should drying winds prevail, overhead syringings with clear, soft water will prove beneficial to the trees until after the leaves have fallen.

GATHERING AND STORING OF FRUIT.—Late Pears should be handled and stored very carefully, as they are soon bruised. They must not be gathered until the latest possible moment, or they will shrivel after being stored. The fruit should be almost ready to fall before it is gathered. Pears already in the store should be examined every three or four days, removing any that show signs of having been damaged or that exhibit decay. Allow stewing Pears to remain on the trees for as long as possible. Most varieties of Apples should be gathered and stored within the next fortnight or three weeks, as we may expect autumn gales before that period has elapsed.

VINES ON WALLS.—The fine weather has ripened the berries, and in many instances the bunches are ready for gathering. Backward bunches will have but little chance of maturing; these may be cut with a goodly portion of wood attached, and the stems placed in bottles of water in a warm greenhouse or room. Many of these bunches will mature sufficiently to be used for dessert or other purposes, but the flavour will not be so good as those ripening naturally. After the fruit has been removed from the Vines shorten all lateral and leading growths to allow the sunlight to reach the wood at the base of the spurs, for unless those portions of the Vine become fully ripened the basal buds will not mature. The soil of the border, and especially where the latter adjoins a brick wall, must be well watered. If the soil is of a light or porous nature feeding the roots liberally with liquid manure will greatly assist the maturation of the buds, and increase their size. With the continuation of warm weather well into September Vines on both walls or pergolas should be well matured, and should suffer little, if any, damage from severe frosts later.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINTHGHOW, Hopetoun, South Queensferry, N.B.

PEACHES.—The work of root-pruning and replanting early Peaches should be completed at the earliest opportunity, and afterwards the renewing of old, worn-out trees by fresh specimens should receive attention. The necessary soil for planting should be prepared and placed in an open shed, where it will be in a proper condition when wanted. Suitable soil for Peaches and Nectarines consists of good,

heavy loam chopped into rough portions and mixed with lime rubble, charcoal, and wood ashes, with a sprinkling of bone-meal added. The compost should be well mixed by turning it several times, and it is important that it be neither too wet nor too dry. If too wet it is likely to cake when made firm about the roots, and this would hinder aeration of the ground, whilst dry soil cannot be made sufficiently firm, and loose soil results in long-jointed growths. In selecting trees for planting, give preference to those with well-ripened shoots, and free from the slightest trace of gumming. Trees in good condition usually transplant well and soon recover from the disturbance. When the work of planting is completed soak the roots with tepid water to settle the soil amongst them. Tie the shoots loosely to the trellis-wires until the soil has settled to its proper level. In bright weather shade the trees lightly for a few days. If the trees have been carefully disbudded very little pruning will be necessary beyond removing a shoot here and there to ensure a proper balance of growth. If the shoots on the later varieties are sufficiently ripened, the leaves can easily be dislodged by drawing a few twigs over the branches, but this must be performed carefully, or much damage may be done to the buds.

PINEAPPLES.—Late plants of the Queen variety that are ripening their fruits should be kept fairly dry at the roots. The atmosphere, also, should be kept dry and rather warm. It is best to grow these fruiting plants in a house by themselves, where their requirements can be better attended to. Plants that are intended for fruiting next season require less water at the roots now, and should only be syringed occasionally on fine days. The temperature should be lowered in the course of the month to 65° by night, and maintained at 75° by day. Keep the glass clean, for the plants require all the light it is possible to obtain in winter. The roof may be washed with clear water, or cleansed during heavy rain storms.

WINTER-FRUITING TOMATOS.—Some of the fruits on the earliest plants are set, and every opportunity should be taken to pollinate the later flowers to ensure a good set before the end of October. Maintain a warm, buoyant atmosphere, admitting air freely whenever the weather permits of ventilating, as any attempt at forcing would probably result in failure. Care must be taken to see that the roots are not watered unnecessarily. Allow the plants plenty of room, and remove all side-growths as they appear.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

VANDA SANDERIANA.—It is only on rare occasions that this Vanda is seen in a healthy condition a few years after it has been imported. Plants that are in a robust state will now be pushing up their flower-spikes, but weak examples should not be permitted to develop a scape. A position fairly near to the roof-glass should be chosen, and until the flowers are removed the roots will need plenty of moisture. The plants should remain throughout the year in a warm house, in a moist atmosphere, and never be allowed to get dry at the root. The supply of water, however, should be much less in the winter than during the summer months. If scale insects are present on the leaves they must be washed off at once.

COELOGYNE CRISTATA.—Plants of this species are approaching the end of their growing period, and from now until fresh root-action is evident next spring, only sufficient water should be given to maintain the plants in a healthy state. Other Coelogynes which have reached this stage may be treated in a similar manner.

PHALAENOPSIS.—These Orchids have grown freely during the past two months, and the winter-flowering species, such as *P. amabilis*, *P. Sanderiana*, *P. Stuartiana*, and a few others that produce their scapes at various seasons, are on the point of pushing up their flower-spikes. Examine each plant before the roots are watered to see if moisture is required. If slugs are prevalent place a band of cotton-wool around the

tender spikes, or stand the plant over a saucer of water. The atmosphere must not be excessively moist, and, excepting on very bright days, shading is not necessary. A little air may be admitted through the top ventilators in favourable weather, but care must be taken to prevent cold draughts, which would check the growth of the plants.

BOLLEA, PESCATOREA AND WARSCEWICZELLA.—These Orchids were formerly included in the genus *Zygopetalum*, but they are quite distinct, having no pseudo-bulbs, and they are less amenable to cultivation than *Z. Mackayi* and allied species. All are shade-loving plants, need a more or less moist atmosphere throughout the year, and should be grown in a warm house. The plants may be grown either in teak-wood baskets or pans, which should be filled one-half of their depth with drainage material. The rooting medium should consist of chopped Sphagnum-moss one-half, and the remainder of fibrous peat, partly decayed leaves, and crushed crocks. It is not advisable to disturb the plants at frequent intervals; when re-potting is necessary it must be carried out carefully, for the roots are easily injured. The compost should always be sweet; that on the surface which is liable to become sour may be replaced from time to time by top-dressings. Watering is an important detail in the cultivation of these Orchids, for although the roots must never be dry, they must not be saturated to the extent of being water-logged. Some growers plunge the pots in a bed of moss, a necessary proceeding where much fire-heat is required to maintain the temperature, but if the house is naturally moist plunging is not desirable, as the plants may be kept too wet at the roots. During the summer light sprayings overhead are beneficial, but from now onwards spraying should be discontinued. Insect pests must be held in check, or the plants will soon deteriorate.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

PLUMBAGO.—The blue and red-flowered *Plumbagos* are attractive in late summer and autumn. The time of flowering depends, to some extent, on the temperature and the treatment the plants have received during the growing season. They are probably seen to the best advantage when planted in a border with their branches trained loosely to a pillar or rafter. In these conditions the flowers attain a larger size than those of pot specimens. But for general usefulness pot plants have the advantage, as they can be used wherever desired. Feed the roots liberally with liquid manure and clear soot water at this stage, and syringe the top growth with weak, clear soot water until such time as the flowers show colour. After the plants pass out of bloom shorten the shoots partially, and withhold water from the roots gradually until the heads break into growth again.

BULBS FOR FORCING.—The remainder of the bulbs should be potted and treated as recommended in the calendar for August 21. In addition to those mentioned previously, there may be potted Hyacinths, Crocuses, Snowdrops, Scillas, Irises, Tulips of all sorts, and white Lilies, such as *Lilium candidum* and *L. Harrisii*, which prove useful for early spring decorations.

CINERARIA.—Plants of greenhouse *Cinerarias* raised from a second sowing made with the object of having successional blooms in spring are large enough for shifting into 5- and 6-inch pots in which they will flower. Use a similar compost to that recommended in the Calendar of August 7. After potting, stand the plants in a cold pit or frame on a bed of ashes, raised sufficiently to bring them near the glass. *Cinerarias* need a cool, humid atmosphere, and consequently will do best in a cool pit or house until the end of the present month, or later, provided a protective covering is used when there is danger from frost. The roots of the earliest plants are well developed, and will be benefited by liquid manure at alternate waterings. Examine the plants carefully from time to time for insects, and when necessary fumigate the house lightly before the pests increase, as the strength of fumigant necessary to kill older insects often injures the foliage, especially when

the plants are well grown and have large, soft leaves.

[(CALCEOLARIA.—Herbaceous and shrubby *Calceolarias* require a similar compost to that recommended for *Cinerarias*. A cold pit or frame in a light, sunny position is the best place to grow them to the end of the present month. Admit plenty of air in the daytime, but close the lights at night. If the plants treated in this way are of a good, vigorous strain, they will form stout leaves that will be in good condition at the end of the year, and well-flowered specimens may be expected.

CEANOTHUS.—The *Ceanothus* is a fine flowering shrub, and when grown in pots is most useful for conservatory decoration during the spring months. The variety *Gloire de Versailles* is one of the best for the purpose, and it requires similar treatment to that given to other hardy shrubs. The specimens may be planted out during the summer if desirable, but I find it better to keep them in their pots and plunge them in a bed of ashes.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

TOMATOS.—The plants which are intended to produce ripe fruits in winter must receive very careful attention. Water them with extra care, and when moisture is needed let it be sufficient to moisten the whole of the soil. If the weather continues fine the roots may be fed with manure water twice weekly. The growth may be allowed a little more freedom in the winter, as this will stimulate root-action, and the fruits will be of better quality. As the berries approach the ripening stage gather and place them in the fruit-room, where they will keep in good condition for 10 days. Ventilate the house freely when the weather is favourable, and let the temperature be about 60° at night.

BEETROOT.—The earliest plants should be lifted as soon as possible, or the roots may become too large for serviceable use. Store them in a cool shed, or they may be placed behind a north wall with sufficient covering to protect them from frost and drying winds. The latest roots should be lifted and stored before frost threatens. A cool dry shed and plenty of sand is necessary, so that the roots may be kept in a plump condition until May.

LATE PEAS.—The sunny weather of September suited Peas. Examine the plants at least once each week, and, when necessary, soak the rows with soft water, for if the quantity of water is not sufficient to reach the extremities of the roots very little good will result. Keep the pods picked as they become large enough, as this will assist the later ones to develop. The tops may also be removed from the leading stems with the same object.

CELERY.—The plants forming the main crop should be earthed carefully when the foliage is dry. Previous to this let the trenches be soaked with clear water. Remove all side-growths and decaying leaves, draw the leaves together with the hands, and keep them in position by a band of some soft material. The earthing up may then be done. Do not place large quantities of soil around the stems at one time, as this has a detrimental effect on the plants. See that none of the soil reaches the heart of the plant, or growth will be deformed.

CELERYAC.—Give a liberal supply of water to this crop, and keep the ground free from weeds. The roots may be fed with manure water at least once a week, but do not use the stimulant at too great a strength.

WINTER GREENS.—Stir the soil in which Coleworts and other green crops are planted, and water the plants so that they may mature their growth before the season is far advanced.

LEeks.—This crop should be well watered with liquid manure, or the plants may be stimulated by sprinkling fertiliser along the rows, previous to applying clear water.

ENDIVE.—All available pits should be filled at once with Endive in order that the plants may become established before the winter. Allow a space of 15 inches between the plants to permit

of the Dutch hoe being used freely. Keep a keen watch for slugs, which may be destroyed by lime or soot sprinkled in the early morning. Endive growing in pits and allowed to develop to their full size will withstand the winter much better than those which are lifted when full grown to be blanched under glass; they will be less likely to suffer from the effects of damp. Every available pit should be filled with this salad at once.

GLOBE ARTICHOKEs.—This crop is frequently neglected after the heads have been cut. In dry summers the plants should receive a liberal supply of water. Remove all rubbish from the stems at once to allow the air and light to reach them.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

THE ROCK GARDEN.—The present is a suitable time to overhaul the rock garden. The work of planting, renewing, or top-dressing the soil, propagating, and clipping back subjects that have overgrown their space should be given attention. First prepare the necessary soils for planting and top-dressing, varying the materials to suit the different kinds of plants. Peat or loam mixed with grit is necessary for many, while a larger quantity of grit must be used for such subjects as *Androsace*, *Onosma*, and *Wahlenbergia*. Rich soil is required for such plants as *Gentians*, *Primulas*, and *Hepaticas*, which enjoy moist positions. Old potting soil is excellent for working amongst *Thymes*, *Veronicas*, and *Arabis*. The planting of all except the tender subjects may be done now, for the soil is warm and the roots will soon become re-established. Where the plants and soil are exhausted, remove the old soil, replace with fresh compost, and replant a healthy portion of the old clump. In the case of Mossy Saxifragas and Sedums, the growing points—without roots—may be planted firmly. The work of top-dressing should be done carefully. Work the compost well around and in the centre of the plant, pressing it firmly. Bulbs such as *Iris histrio*, *I. histrioides*, *I. reticulata*, *Chionodoxa*, *Scilla sibirica*, and *Triteleia uniflora* may be planted among the Saxifragas. The pretty *Tulipa Clusiana*, which thrives and increases yearly, may be included. *Anemone apennina* and *A. blanda* should be planted in a warm spot, but select shady situations for *A. nemorosa* and *A. sylvestris*. Many rock plants reproduce themselves freely from seed, and any seedlings which are large enough may be pricked off into boxes and grown in frames. Suitable shrubs and Conifers may also be planted. Choose positions according to the habit of the plant: those with spreading or drooping branches may overhang rocks. Good Conifers of a spreading habit include *Juniperus Sabina*, *J. japonica* var. *aurea*, *J. virginiana tripartita*, *J. canadensis*, *J. canadensis aurea*, and *Cupressus pisifera* var. *nana aurea variegata*. More compact growers are *Picea excelsa* var. *clanbrassilliana*, *P. e. var. pygmaea*, *P. e. var. Remontii*, *Cryptomeria japonica* var. *elegans nana*, *Cupressus obtusa* var. *pygmaea*, *C. obtusa* var. *nana*, *Retinospora leptoclada*, *Pinus sylvestris* var. *beucoriensis*, *Thuya occidentalis Rheingold*, and *T. orientalis nana aurea*. Suitable shrubs may be included according to the space at command.

THE APIARY.

By CILLOIS.

MAKING SYRUP.—Take five pints of water, to this add 10 lbs. of white lump cane sugar, 1 oz. of vinegar, and $\frac{1}{2}$ oz. of salt. Boil over a clear fire for a few minutes, taking care not to allow it to burn. As the object is to get the food stored and sealed as soon as possible, place it on the hives lukewarm, and open the feeder holes to the fullest extent. To conserve the heat, wrap the bottles warmly, taking every precaution to prevent the syrup being spilled. The work should be done as late in the evening as it is convenient.

NOTE.—When the hives are opened watch carefully for the larvae of the wax moth and destroy them. They are most commonly found underneath the quilts and along the grooves of the split top frames.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR OCTOBER.

SATURDAY, OCTOBER 2—
Finchley Early Flowering Chrys. Show.

MONDAY, OCTOBER 4—
National Chrys. Soc. Floral Com. meet.

TUESDAY, OCTOBER 5—
Roy. Hort. Soc. Autumn Fruit Sh. (2 days). Scottish Hort. Assoc. meet.

WEDNESDAY, OCTOBER 6—
Roy. Hort. Soc. Affiliated Soc. meet.

THURSDAY, OCTOBER 7—
B.G.A. (Watford Branch) meet. Lecture on "Intensive Cultivation," by Mr. E. F. Hawes. Manchester and N. of Eng. Orchid Soc. meet.

MONDAY, OCTOBER 11—
United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, OCTOBER 12—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "The History of the Classification of the Apple," by Mr. E. A. Bunyard.)

THURSDAY, OCTOBER 14—
B.G.A. (Central London Branch) meet.

MONDAY, OCTOBER 18—
Nat. Chrys. Soc. Executive and Floral Coms. meet.

THURSDAY, OCTOBER 21—
Manchester and N. of Eng. Orchid Soc. meet.

MONDAY, OCTOBER 25—
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, OCTOBER 26—
Roy. Hort. Soc. Coms. meet. (Lecture on "A Century of Floral Progress," by Rev. Prof. G. Henslow, M.A.)

FRIDAY, OCTOBER 29—
Devon and Exeter Hort. Soc. Show.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 52.5.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, September 30 (10 a.m.): Bar. 29.2. Temp., 50°. Weather—Cold and bright.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 10.30.

MONDAY AND WEDNESDAY—
Bulbs, Bay Trees, Perennials, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.

TUESDAY AND WEDNESDAY—
41st annual sale of Nursery stock at Sunningdale Nurseries, Windlesham, Surrey, by Protheroe and Morris, at 12.

THURSDAY—
Nursery stock at the Nurseries, Pirbright, by Protheroe and Morris, at 12.

Those of our readers who visited the *Daily Mail* Vegetable Show, of which a report was printed in our last issue, may very possibly have left the hall with mixed feelings. Whilst recognising the public spirit of our contemporary in organising the exhibition and in offering such liberal prizes, visitors may have taken a somewhat pessimistic view of the outcome of the enterprise. Notwithstanding that the inadequacy of the space afforded by the R.H.S. hall compelled the authorities to look over the exhibits as they were received in order that the least meritorious produce might be excluded from the Show, the display proved disappointing owing chiefly to the fact that the general standard was low. This view impressed the

expert reporters, including our own representative, which proves beyond doubt that the average quality of the vegetables was inferior to that generally ruling at exhibitions. At first sight many felt that, after all, the cottagers of Britain were not the painstaking gardeners we had supposed them to be; but, on the contrary, a careless class without gardening zeal or cultural skill, yet eager to gain prizes.

Fortunately, there is another explanation far more satisfactory, and in keeping with the personal knowledge we have of the splendid vegetables cottagers are in the habit of staging at the country shows in every part of these islands.

It will be remembered that our contemporary offered prizes of such value as was never before obtainable for such homely products, and this fact undoubtedly caused thousands to exhibit who possessed not the slightest knowledge of the niceties of the operations in the selection and arrangement of exhibition produce, and others even who, until this season, have never cultivated garden produce of any description. This tendency to draw in entirely fresh recruits was strengthened by the fact that the popularisation of the Show was carried out by a paper that lays no claim specially to represent amateur gardeners. Indeed, we are convinced that the true amateur gardener class, such as is found in our rural cottages, was only very poorly represented. If this fact be fairly recognised, our disappointment in the exhibits will give place to satisfaction that many possessing small gardens, yet of non-gardening habits, have been induced—for this season at least—to try their hand in tilling the soil, for experience shows that once a man takes up growing with sufficient seriousness to exhibit, failure to gain an award acts not as discouragement, but as a stimulus to further effort.

There are other circumstances connected with the exhibition that call for comment, and among them the lack of experience shown by those responsible for staging the exhibits. We are not speaking for the moment of the exhibits of excellent produce staged in tempting fashion by professionals, including single-handed gardeners, but of the general exhibits that constituted the major part of the display. These were all placed in oblong boxes, eight inches deep, which were arranged side by side at a very considerable slope on all the tables. Nothing could be more calculated to detract from the interest of the show, in so far as its general appearance was concerned. It was possible to stand at one end of the hall and look along between the rows without even seeing any vegetables, but merely the unplanned, unvarnished wood of the rough boxes. In many cases it was not evident whether the box contained Parsnips or guinea pigs, unless one stood over the box and looked into it, for some exhibitors had merely put a little hay at the bottom of the box, and upon it laid the produce for exhibition.

We know that at this great show there

were unusual numbers to deal with, and the authorities were unfortunate in having to give up the larger site at Olympia originally chosen for the display. Nevertheless, it ought to have been foreseen by those responsible for the arrangements that the box system of display adopted would be certain to make the exhibition appear unsightly. In another respect, an obvious means of making the Show attractive was neglected, and all the best produce in the professional gardeners' classes was relegated either to the recesses or to the end of the hall. Yet the value of high-class produce at a show of this nature is that it is capable of giving to visitors, including competitors, object lessons in the points that contribute to excellence, and it should have been staged in the centre of the hall or some other place of prominence.

It could be wished that all the less experienced competitors could have been given the opportunity of profiting by an inspection of these superb vegetables from the professional growers, but in this matter we fear that little was achieved. Months ago they were informed by a printed communication that it was not necessary for them to be present, and this intimation was unaccompanied by any statement of the interest and value a visit would have for those who could make it convenient to attend. Yet everything possible should have been done to get the exhibitors to take a live interest in the event. The actual number of competitors that turned up must have been small, and the attendance of the general public was likewise disappointing, notwithstanding the presence of military bands; indeed, the hall was seldom more than moderately filled with visitors.

It is to be hoped that the *Daily Mail* will secure from the judges a series of candid reports on the several exhibits, and that these reports may contain not only the usual complimentary phrases on the excellence of the successful produce, but also kindly advice to those who have failed and indications of the faults of cultivation shown by the exhibits. Such reports published in the widely read pages of our contemporary should be of real help in bringing about the end which we all wish to see secured, namely, a general improvement in cultivation.

That the fulfilment of this object is one of urgent importance has been insisted on again and again in these pages, and is now generally recognised, and the exhibition has demonstrated conclusively that the small gardens of the State might easily make larger contributions to national economy.

In conclusion, we may say we welcome the co-operation of our contemporary in the work of interesting the people of this country in simple vegetable gardening, and we do so for two main reasons, namely, that the men themselves will be benefited in health and pocket by coming under the spell of the gardening habit, and every convert will help permanently to increase the resources of our country in so far as they are concerned with some of the more valuable articles of food.

WAR HORTICULTURAL RELIEF FUND.—This fund to assist horticulturists in the countries of our Allies to re-establish their businesses when peace is restored is making quiet progress. It is an interesting fact that on September 23 the total amount received in donations and promises of donations was £5,555 5s. 5d.

NATIONAL CHRYSANTHEMUM SOCIETY.—The series of educational meetings organised by this society will be opened on Monday, the 4th inst., when Mr. C. HARMAN PAYNE will deliver an address entitled "A Chat about the Golden Flower, its Poetical, Mythical and Romantic Associations," in the Dickens Room, Carr's Restaurant, Strand, at 7 p.m. The lecturer's remarks will be illustrated by lantern views.

PLANT COLLECTING EXPEDITION SEVENTY YEARS AGO.—We are happy to announce the departure of Mr. HARTWEG on a new expedition on behalf of the Horticultural Society. Upon the present occasion the ground to be investigated is California, the riches of which were

the buyer will sort, pack the fruit and run all risks of damage done to the crop before it is gathered.

CYTISUS ALBUS DURUS.—An important place in our gardens is occupied by the group of shrubs commonly classed together as "Brooms." One of the most generally cultivated, on account of its hardiness and the quantity of bloom produced, is *Cytisus albus*, the white Spanish Broom. In wind-swept gardens its tall growth is a drawback, but this can be overcome by growing the variety illustrated in fig. 72. This variety, which is known as *C. albus durus* is as hardy as the type; but the habit is totally different, *C. a. durus* growing almost horizontally. This tendency is seen in the specimen illustrated, which is quite ten or twelve years old, and is only 3½ feet in height, with a spread of 13 feet. The plant is growing in a rocky border, planted in some large stones about 3 feet above the ground level. This appears to be an ideal position; the shoots are

journal appears to be somewhat thinner than formerly, but seems otherwise to be as usual. The first article gives a description of *Ceratopteris cornuta* Le Prieur, a variety new to cultivation, with several illustrations showing habit and culture. Several columns are occupied by a contribution to the perennial subject of organic versus inorganic manure, and there are other articles of interest. On one page is a long list of erstwhile gardeners who have entered the army and met their death in action.

SCHOOL OF GARDENING IN AN INTERNMENT CAMP.—Many Belgian soldiers are interned in Holland at the Zeist camp, and among these are to be found a number who were formerly engaged in horticulture and agriculture. Through the energy and enterprise of one of the Louvain professors, Monsieur V. Antoine (who is among those interned) a "school of gardening" has been started, and is now regularly attended by nearly three hundred students. Unfortunately the gardening students and their



FIG. 72.—*CYTISUS ALBUS DURUS*, A PROCUMBENT VARIETY OF *C. ALBUS*, SUITABLE FOR WIND-SWEEP GARDENS.

scarcely touched by Mr. DOUGLAS. It is a country abounding in handsome annuals and perennials, beautiful bushes and noble trees, all of which will be hardy enough to bear the climate of England. The expedition is to last three years, and the experience which Mr. HARTWEG possesses of Spanish America, together with his zeal and activity, and the ample protection which has been extended to him by Her Majesty's Government, authorise us to congratulate the Fellows of the Society beforehand upon the valuable plants which they may expect to obtain through his means. *Extract from the Gardeners' Chronicle, October 4, 1845.*

A BIG APPLE DEAL. Mr. CHRIS. RINGHAUSEN, Calhoun County, U.S.A., who is known in America as the "Apple King," has sold his crops growing in four orchards for 29,400 dollars. It is estimated that the total yield will be 21,000 barrels. The sale is stated to be the biggest deal in Apples that has taken place in the United States. Mr. RINGHAUSEN, according to an agreement between himself and the buyer, will pick the crop and place it on the sorting table, but

able to droop at the tips, which seems to be their natural habit. There are many beautiful species and varieties of Brooms all equally useful for garden decoration and blooming from April to late September. *C. praecox*, with sulphur-yellow flowers, blooms in April and May; *C. purpureus*, a low shrub, produces purple flowers in May; *C. scoparius* is the common yellow Broom; *C. kewensis* (cream) and *C. Beanii* (clear yellow) are two beautiful hybrids raised at Kew which are very suitable for the rock garden. *C. Dallimorei*, also a Kew hybrid, is a beautiful shrub, with flowers of various shades of rosy pink. *C. spartium junceum* is a yellow Spanish Broom which flowers from June to September. Then there is *Genista Phoenensis*, the Etna Broom, a tall shrub, assuming the form of a small tree, producing its golden-yellow flowers in July-August. The photograph of *C. albus durus* reproduced in fig. 72 was taken in the nursery of Messrs. ROBERT VEITCH and SON at Exeter.

"MOLLERS DEUTSCHE GÄRTNERZEITUNG."—We have received via Holland a copy of *Mollers Deutsche Gärtnerzeitung* for September 4. The

teachers find themselves seriously handicapped by the want of suitable books and other gardening literature. There may be some of our readers who have books on agriculture, horticulture, and allied subjects, or back numbers of gardening periodicals, especially those containing plates, coloured or black and white, which they do not need. If these could be sent to Monsieur V. ANTOINE, 14e de Ligne, Cie. des Etudiants, Camp de Zeist, Amersfoort, Holland, they would be very greatly appreciated. They can be sent free of postage charges.

HOOKER'S "ICONES PLANTARUM."—The current part of this publication contains figures of the singular *Sladenia celastriifolia*; various *Dalbergiaceae*; the curious Australian *Cypselocarpus*; *Homozeugos*, a new genus of tropical African grasses, and a selection of South African species of *Thesium*. There are also figures of several pretty species of Chinese *Meconopsis*. *M. Forrestii* is a very distinct species with unbranched scapes less than a foot high, and race-mose pale blue flowers about 2 inches in diameter. *M. concinna* is a neat little plant with a

rosette of leaves and several one-flowered scapes from 2 to 6 inches high, bearing solitary sky-blue flowers about an inch in diameter. *M. venusta* is of the same habit as the last, but of more robust growth, with deep purple-red flowers $1\frac{1}{2}$ to 2 inches across. All three were discovered and collected by Mr. G. FORREST at elevations of 10,000 feet and upwards. *M. Forrestii* is in cultivation in the Edinburgh Botanic Garden. *Boschia Mansoni* is a large tree of Burma, allied to *Durio*, and remarkable for its very large staminal column, with five primary branches and very numerous secondary ones. But perhaps the most interesting plant figured in this part of the *Icones* is *Populus Denhardtiorum*, a native of British East Africa, closer on the equator, inhabiting river banks from sea level up to about 1,500 feet. It grows from 60 to 100 feet, and its small, coarsely-toothed leaves are borne on slender, twisted petioles so that the blades hang vertically. This is another example of a member of a normally temperate genus inhabiting tropical regions. It is allied to the widely-spread and variable *P. euphratica*.

WAR ITEMS.—The net profits of the fête held in conjunction with the autumn show of the Royal Horticultural Society of Ireland, in Lord Iveagh's grounds, Dublin, on August 24, amounting to £125 19s. 8d., have been equally divided between the Irish branch (under the auspices of the R.H.S.I.) of the Vegetable Products Committee, for supplying fruit and vegetables to the Fleet, and the Royal Dublin Fusiliers' Prisoners of War Fund.

—We learn with great pleasure that Lieutenant ERIC SUTTON, second son of Mr. LEONARD SUTTON, has been awarded the Military Cross for initiative and bravery in conducting mining operations at the Front. Lieutenant SUTTON was taken from his platoon and appointed mining officer, and it was in the course of duties connected with this post that he won the coveted decoration.

BANKRUPTCY STATISTICS.—The Inspector-General in Bankruptcy, in his report for the year ending March 31 last, gives statistics as to losses sustained by the trading community through bankruptcies and deeds of arrangement. The total number of receiving orders in England and Wales was 2,867 as against 3,358 in the preceding year. The total number of deeds of arrangement is returned at 1,776, as against 2,411 in the preceding year, thus showing a decrease in the number of failures of 1,126. The total liabilities as estimated by the debtors for 1914 amount to £9,878,188, as against £7,857,194 in 1913. The total estimated assets for 1914 amount to £5,792,206, as against £3,303,382 in the preceding year. The total loss to creditors during last year is estimated at £8,155,673, as against £6,352,622 in the previous year, so that although there were fewer failures last year there was an increase in the loss to creditors of £1,803,051 as compared with the previous year. With regard to gardeners, florists and nurserymen, there were 55 failures in 1910, with total liabilities amounting to £68,144. In 1911 there were 36 failures with liabilities amounting to £36,374. In 1912 there were 38 failures, with liabilities amounting to £38,008. In 1913 there were 23 failures, with total liabilities amounting to £18,791. In 1914 there were 21 failures, with liabilities amounting to £17,428, so that there was a decrease of two in the number of failures and a decrease in the amount of the liabilities to the extent of £1,365.

MYRMECOPHILOUS PLANTS.—A generation or so ago students of botany found relief from the severe logic of their studies in contemplating the romance of the ant plants. Travellers told strange tales about these plants and brought home wonderful specimens in confirmation of their discovery that the ant plant is so constructed as to serve as a fortress garrisoned by ants, and thereby protected against all

enemies. The day of the fortress is gone by, and with it, as recent research would seem to show, the ant fortresses have gone also, battered down by the big artillery of the modern botanist. *Humboldtia laurifolia* was one of those romantic ant plants; but it has been shown that its title is false. Its claim has been demolished, and it has been demonstrated that not only do ants afford no protection to the plant, but that they actually do it harm, for they attract woodpeckers. *Myrmecodia tuberosa*, the tuber of which is hollowed out into galleries, some with smooth, yellow walls and some with warty, black walls, has, according to the summary given by Professor CAVERS (*Knowledge*, July 15), no better claim. The black, warty patches are said to be only organs for the absorption of water, and the ants, which do actually use the passages, are there as intruders and not as militia. It appears true, however, that the ants use the yellow, smooth chambers for the purpose of depositing their eggs and the black areas for depositing their excrement. It is also true that a fungus grows on the warty areas and gives to the latter their black colour. And inasmuch as the fungi sometimes present the appearance of having been browsed upon, it is possible that the ants—as is known to be the case with other fungi—eat the fungus harvest which grows from their own waste. Many of us have puzzled our brains to imagine how plants could be so uncannily cunning as to prepare lodgings for their defenders. Now we learn that the exercise was as unnecessary as it was unproductive. Nevertheless, we feel a little sorry, for future botany students will have one less of the already few patently romantic episodes admitted within the prosaic pages of their textbooks.

THE MECHANISM OF HEREDITY.—A series of articles by Mr. R. A. ROLFE on the "Mechanism of Heredity" has appeared in the three last issues of the *Orchid Review*. The subject is dealt with largely in connection with reversion among secondary hybrids, and the author shows how this depends upon the nature of the reproductive cells, whose origin and development are described very fully. Hybridisation consists in the combination of specifically distinct ancestries in the same individual, the necessary result being a compromise between conflicting qualities and the production of individuals possessing more or less intermediate characters. But hybridisation is only an extension of sexual reproduction beyond specific limits, and sexual reproduction itself has grown directly out of the older process of reproduction by vegetative bipartition, by a series of progressive modifications. Primitive reproduction took place entirely by vegetative bipartition, a process ultimately leading to exhaustion, against which the process of sexual reproduction arose as a reaction, the conjugating cells regaining the power to develop into a new individual. The conjugating cells are called gametes, and fusion takes place by the union of their nuclei into one, and the resulting cell is known as the zygote. Its subsequent development is by the original process of vegetative bipartition. Fusion is followed by a period of quiescence, during which a new cell wall is formed round the united protoplasmic mass. When the gametes are derived from diverse species, primary hybrids are produced, and these are generally remarkably uniform in character, which shows that it is not crossing alone that is the cause of variation. It is when primary hybrids are self-fertilised or crossed with something else that the wide range of variation and reversion manifests itself, and this shows that something has happened in the interval between the origination of the hybrid and the formation of its reproductive cells. It indicates incompatibility between characters derived from distinct ancestries, and shows that a hybrid is a mosaic, a fact that can often be witnessed when characters and tissues from diverse ancestries are developed

side by side. A complete blending would result in a batch of uniform secondary hybrids, a fact appreciated by Mendel when he pointed out that hybrids in which the diverse elements were permanently accommodated together reproduced themselves true from seed and had all the attributes of species. Incompatibility would manifest itself at once, and would naturally be reflected in the reduction division. It is contended that there is a substantial identity of character between the phenomena indicated and the separation of mixed characters seen in sports and in graft hybrids, in which the aid of a reduction division cannot be invoked. The author remarks that hybridisation is not a new process; it merely unites gametes of diverse instead of the same ancestry, and all its processes are otherwise identical. He is inclined to regard reversion as a mere accidental accompaniment of a fundamental process, a sort of by-product of sexuality, due to imperfect blending or re-separation, through incompatibility, of hereditary qualities derived from diverse ancestries. The nucleus of the vegetative cell gives rise to the reduced nucleus of the gametes in the germ plasm, and the gametes which unite to form the new individual may be those of the same or of a diverse species, according to opportunity. In the latter case a hybrid is formed, in which incompatibility may manifest itself, and this would result in the production of gametes of diverse character when the germ plasm came to be formed, and their subsequent union in the sexual process would inevitably produce the phenomena of variation and reversion with which we are now so familiar in batches of secondary hybrids. Species produce uniform gametes, hence the degree of uniformity seen among primary hybrids.

VEGETABLE OILS AND FATS IN GERMANY.—In a recent number of the *Chemist and Druggist* some very enlightening facts are given on what is entitled the "Fat Famine in Germany," which illustrate the wide range of vegetable oils and fats under cultivation in that country. It is pointed out that fats and oils, as a source of glycerine, are as essential to belligerent Powers as cotton, and now that the bulk of the world's output of vegetable oils and fats is being consigned to British ports instead of to Hamburg as formerly, the German War Council is giving instructions for the recovery of fats from the kitchens of hotels and private houses, sausage factories, and all similar places whence fats can be obtained. Further, it is stated that in the daily Press, as well as in the pharmaceutical and chemical papers, the attention of the people is drawn to the importance of collecting all oil-producing seeds to be found in Germany, such as the kernels of Cherries, Apricots, Peaches, Grapes, Plums, the fruits of Sun-flowers, and Beech trees. A long list has also been published of oil-producing plants with their percentages of oil. Commenting on this, the *Chemist and Druggist* states: "We do not suppose that there is enough of these plants grown in Germany to produce sufficient glycerine-yielding oils for a week's supply of ammunition, but the facts are of interest as throwing an unusual sidelight upon Germany's internal conditions. Britain has nothing to complain of in the matter of fat supplies. In the week ending September 4, 112,271 packages of oils and oil seeds were landed in this country, representing, say, about a quarter of a million hundredweights, besides one consignment of 1,200 tons of *Arachis hypogaea* (Ground Nuts)."

POTATO DISEASE.—Potato disease (*Phytophthora infestans*) has destroyed the haulm of Potato crops in many parts of the country, and the dead haulm, if allowed to remain in the soil, may infect the tubers. In view, however, of the drier weather of the past few weeks it is probable that as yet relatively few tubers have been attacked, and, consequently, that the immediate removal of diseased haulm would minimise

risk of infection. As a further precaution, however, all crops should be lifted as soon as possible and carefully stored.

USE OF BRACKEN AS LITTER.—In certain districts where straw is scarce or where it may be profitably fed to stock, farmers and stock owners should consider the possibility of using Bracken for litter. A special leaflet giving a short account of the use of Bracken has just been issued by the Board of Agriculture and Fisheries, who will send a copy to any applicant on receipt of an unstamped postcard addressed to them at Whitehall Place, London, S.W.

BERRIES IN SEASON.—We have received from Mr. T. SMITH, of Daisy Hill Nursery, Newry, a number of fruiting sprays of trees and shrubs. *Sorbus alnifolius* is bearing a quantity of panicles of its small, oval berries, of a bright coral red. *Crataegus sub-mollis* is covered with globular scarlet haws, disposed among long, formidable-looking spines. *Pyrus Sorbus foliolosa* is a pretty shrub with pectinate leaves and berries resembling small, rosy-tinted Snowberries. The fruits of *Pyrus Malus Sargentii* are like small, dull-red Cherries, in bunches of four to five, about the size of Red Currants, borne on one-inch stalks. *Pyrus Malus Toringo* bears rather larger berries than the last, the less-matured ones being of golden colour flushed with red. *Andromeda Catesbaei* has berries of an intense red; the stems are also red, the whole producing a beautiful effect. *Viburnum cassinoides* bears a plentiful crop of berries, which change from pale greenish-yellow through coral-red to an intense black. *Cotoneaster moupinensis* has fruits of a brilliant scarlet; and *Cotoneaster acuminata* also has berries of an attractive red hue.

RAINSTORM IN THE NORTH OF SCOTLAND.—Serious damage has been caused to crops and other property in the North of Scotland by a rainstorm experienced on September 25 and 26. Great damage has been caused to field and garden produce, and hundreds of acres of land left in a flooded condition. Bridges were swept away and in some parts railway communication had to be suspended. On the Highland Railway much injury was done. It is said that the flooding was the worst experienced since the great floods of 1829.

PUBLICATIONS RECEIVED.—*Report of the Department of Agriculture, Ceylon.* January-December, 1914. (Colombo: H. C. Cottle, Government Printer, Ceylon.)—*Proceedings of the Academy of Natural Sciences of Philadelphia.* Vol. LXVII.—*Further Studies on the Spread and Control of Hop Mildew.* By F. M. Blodgett. (Bulletin No. 395.) *Effect of Various Dressings on Pruning Wounds of Fruit Trees.* By G. H. Howe. (Bulletin No. 396.) *Lime-Sulphur versus Bordeaux Mixture as a Spray for Potatoes.* By M. T. Munn. (Bulletin No. 397.) *The Spindling-Sprout Disease of Potatoes.* By F. C. Stewart and F. A. Sirrine. (Bulletin No. 399.) *Strawberry Varieties.* By O. M. Taylor. (Bulletin No. 401.) *New or Noteworthy Fruits.* By U. P. Hedrick. (Bulletin No. 403.) Issued by the New York Agricultural Experiment Station, Geneva, N.Y.—*Report on the Gipsy Moth Work in New England.* By A. F. Burgess. (Bulletin No. 204 of the United States Department of Agriculture.) (Washington: Government Printing Office.)—*The Deterioration of Lumber.* By Merritt B. Pratt. (Bulletin 252, Agricultural Experiment Station, Berkeley, California.)—*The Daffodil Year Book,* 1915. Published under the direction of the Royal Horticultural Society. (London: Wesley & Son.) Price 2s. 6d.—*Transactions and Proceedings of the Botanical Society of Edinburgh,* Vol. XXVI., Part IV. (Edinburgh: Neil & Co., Ltd.)—*Plants We Play With.* By H. R. Robertson. (London: Wells Gardner, Darton & Co., Ltd.) Price 3s. 6d.—*The Tropical Agriculturist:* Journal of the Ceylon Agricultural Society. August, 1915. (Ceylon: H. W. Cave & Co., Colombo.)—*Les Palmiers de la cote d'Azur.* By B. Chabaud. (Paris: Librairie agricole de la maison rustique, 26, Rue Jacob.) Price 5 francs.

HOME CORRESPONDENCE.

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

BULBS AND ECONOMY.—Whatever may be said in favour of cutting down garden expenditure, there is no need to go to the length of abandoning bulb-planting, and all who appreciate the merits of the bulb will protest against the veto placed upon it by crank economists, who wish us to do without one of the very few brightening influences which are ours during our most depressing English winter. It cannot be more truly said of anything than of a flower that there is more in it than meets the eye, for, to many of us, it presents a whole series of intellectual pleasures. Most purchasers are keen on large-sized bulbs, being frequently misled by catalogues which are prone to lay great stress on volume. It is remarkable how often disappointment is the only result of such a selection. Bulbs should not be bought for their size but for their density, and weight is the best test. Let us suppose, for instance, that a bulb measuring 9 inches in circumference weighs 3 ozs., and that another measuring 5 inches weighs 2 ozs. The second bulb is the better one. Two important facts have usually been found to associate themselves with this question, the smaller bulb being much cheaper, and as a rule far more reliable in growth and production. *A. Hemming Barker.*

WOMEN GARDENERS.—The present shortage of male labour in gardens has had the unfortunate effect of introducing a large amount of unskilled or only partially skilled female labour, which constitutes a growing menace to the future standard of gardeners' wages. We read of lady gardeners of twenty years of age, with three years' experience behind them, taking posts as "head gardeners," with several under them! One would like to know what sort of staff they would control, and whether this would include a good journeyman or two who would supply the practical knowledge which could hardly be found in so youthful a "head." It is said that a woman of culture and education does not need quite so long a training as the ordinary boy gardener, who enters the garden at an early age and is almost without culture of any sort; but surely even intelligence and general knowledge cannot make up for lack of experience. Just now the situation may not be very serious; but later on, when the labour market has returned to its old, overcrowded condition, the presence of these half-skilled gardeners will have an extremely deleterious effect on the wages and conditions of experienced professional men. The only remedy that I can see is for gardeners to combine into a strong union and refuse to work with anyone who is not both properly trained and properly paid. *S. J. Martin, Rosemunda, St. Agnes.*

ASPARAGUS IN UNFAVOURABLE DISTRICTS.—Can any reader advise me on the making and upkeep of beds of Asparagus—not in a well-known Asparagus district such as at Evesham, where success is fairly certain if the ordinary routine is followed—but in places where more care is needed. Here I know of beds that are productive and satisfactory, and others where the greatest care and the trial of various devices have produced nothing but failure. Apparently an essential factor is often missing. Is it lime? We have much limeless soil. Or drainage? We have a moist, humid climate with from 40 to 50 inches of rain annually. *Harold Evans, Llanishen, Cardiff.*

GRAPES AT PENRHYN CASTLE.—During a recent visit to the famous gardens at Penrhyn Castle, North Wales, I was impressed by the excellent Grapes produced on vines seventy years old. The vineries are lean-to structures with old-fashioned, sliding-roof ventilation, entailing an immense amount of attention, especially in the case of Grapes ripening at the end of May. The four vineries are about 40 feet long and some 16 feet wide. The vines are grown on the extension system, usually four vines furnishing a house. The rods are brought up from the base at right angles in clusters of three and four together. Trained in this way there are not many spurs or growths to each rod, but all have abundant space for development. Add to this the fact that the rod clusters have a

space of 4 feet between each, and it will be seen that one of the secrets of success is abundant room for leaf development and maturity of both foliage and wood. The house devoted to Muscat of Alexandria variety contained but three vines. A new border was made last autumn both inside and out, and notwithstanding their recent disturbance the vines were carrying handsome bunches of highly-coloured fruit. The growth, too, is indicative of great promise for next season's crop. A late crop of Black Hamburgh on four vines was seen in a vinery of similar size to the last. Vines of Appley Towers, in-arched on Lady Downes, were carrying as many as sixteen bunches (of 3 lbs. each) on one rod, and the berries showed a grand finish. The early house previously alluded to is entirely devoted to the variety Black Hamburgh. *E. Molyneux.*

THE CHERRY PLUM.—I was somewhat surprised in July last to see good crops of the Myrabolan on wall-trees in the garden of Leighton Park School, Reading, as I have always understood that for some subtle reason (not wholly connected with mildness of climate and absence of frost) this Plum does not fruit except in one or two localities. These localities are in Somerset, round Glastonbury and Bridgwater, where it is well known as the Cherry Plum; certain parts of the Eastern Counties (whence it was introduced into Somerset); and I believe I have been told of its success in Southern Scotland. I have a letter from one of the leading firms for fruit trees saying that it is not likely to succeed outside the usual districts; I have seen it growing elsewhere, but not fruiting. The soil at Leighton Park is a good one for fruit generally, and for stone fruit when the necessary lime is supplied; but Mr. Tovey, the excellent gardener there, sees that this point is not neglected. The Cherry Plum is excellent for dessert and cooking, and so attractive in appearance that could it be made to succeed, say, at Evesham, it might prove as serviceable there as has the famous Early Proflick. *Harold Evans, Llanishen, Cardiff.*

SINGLE DAHLIA SAPHO.—At the Dahlia Show in the R.H.S. Hall on September 14 the most novel and distinct Dahlia was Sapho, shown by Mr. Reginald Cory. It consists of fifteen or sixteen semi-fluted florets. The colour is a most charming shade of warm terra cotta, each petal shading off through pale-pinkish terra cotta to pure white. The flower stands erect on a stiff stem. It is a supposed cross between a Star variety sent out by Messrs. Dobbie and a Paeony-flowered one named Durban. Mr. Cory's collection of Dahlias contained a notable range of new tones of colour—for example, The Cornelian, giant single, which was a combination of crimson, chrome and magenta; Fire Opal, just like its name; Abdullah, pale but bright terra-cotta; and Peach Blow; Jackmanii, a huge single the colour of Clematis Jackmanii. Mr. Cory and his gardener (Mr. Cobb) are to be congratulated on the display. *H. C.*

ROSES IN LEEDS.—At the entrance to Roundhay Park, Leeds, there are large numbers of Rose beds which now, end of September, make a brilliant show. One of the most successful and telling varieties is General McArthur. Some beds of it contain a large number of plants, and they have made magnificent growth, 4 to 5 feet; they are covered with blooms and buds, and the foliage is free of mildew. Other varieties doing extra well are Mrs. Wakefield Christie-Miller, Le Progrès, Lady Alice Stanley, Pharisæer, Earlate, Madame Ravary, Marquise de Sinety, Mrs. Amy Hammond and Lady Pirrie. All these are very free of mildew, whereas Frau Karl Druschki and Lyon Rose are full of it. A fine feature just now is the beds of Old Blush Monthly Rose cut in the grass sloping gently down to the waterside. Sweet Peas, herbaceous plants and Dahlias are in full bloom among the latter, one labelled "sport from Charmet" is most effective. It might be called a decorative single about 5 inches in diameter, rich warm crimson in colour, with pure white tips. *E.*

TRADE IN WAR TIME (see p. 204).—My experience is similar to that of Mr. W. H. Divers. I have an instance in which it has taken

fourteen days to deliver plants which had only about fifty miles' journey. The matter is an important one, and unless railway facilities greatly improve orders will either be held over or be placed locally, whereby firms who specialise in perishable commodities will greatly suffer. Could the R.H.S. do anything in the matter? *F. H. B., Frant.*

THE ENGLISH APPLE CROP.—The English Apple crop this year is a good average one despite the earlier expectations. This is remarkable, following the bounteous crop of 1914, for many varieties of Apples are biennial in their maximal productivity. In the Whimble and Devon orchards generally the crop is not only a heavy one, but the Apples are finer than I re-

paid to the trees and growing fruit as is devoted by the "Apple farmers" of Nova Scotia, British Columbia, Oregon and Tasmania? Yet farmers and others grumble at the prices they get when they send their undersized, badly-shaped and unpalatable fruit to some near-by market. Perhaps the most rapidly growing use of the Apple is in the liquid form of cyder, the beverage that has nourished the thews and sinews and inspired the cool courage of Britain's finest sailors from Devon and the East Coast, the shires of "Sea Kings," like Sir Francis Drake, Nelson, Hawkins, Frobisher, and scores of other valiant heroes. English cyder is making a great name for itself. One effect of Mr. Lloyd George's last Budget was the popularisation of cyder, especi-

which in my factory is dried for cattle food by a special apparatus) is sold to the jam-makers for jelly. I also visited the German Government station at Rhudeshelm, where instruction is given in scientific fruit culture among other things, and I was much impressed with its thoroughness. For instance, in order to impress on pupils the necessity for thorough cultivation before planting, a deep trench is dug and trees are planted on the sides, which are encased with glass. The trench is covered in, but on entry the electric light is switched on, and then the ramifications of the roots are plainly seen. In the case of the Vine some of the roots had delved into mother earth from 15 to 20 feet deep, hence the importance of deep cultivation was plainly seen. The new tax on sugar will have the effect of emphasising the value of the researches of the National Fruit and Cyder Institute with reference to making a jelly without sugar. It has already been found possible to produce a very palatable jelly from suitable varieties of cyder Apples without the addition of sugar or glucose. The idea is not altogether a new one. In America a small evaporator for making Apple jelly and concentrated Apple juice is quite a common article with every good orchardist. Apple butter, too (an Apple pulp made with a movable steam coil, which is worked up and down in a barrel stood on end with the top-head out), is also a healthful, cheap and palatable food. The war is having far-reaching effects in another direction in connection with the former export of French Apples to Germany. This export is now cut off, and I am pleased to see that Mr. Fernand David, French Minister for Agriculture, has charged M. Le Rouzic, the Morbihan Deputy, with a mission to England to study ways and means of exporting French Apples and cyder to this country. The French reports, by the bye, speak of fair crops, while the Canadian crop, too, will be a good average one. In Nova Scotia, however, the fruit was recently reported to be badly affected with black spot. *Henry Whiteaway, Whimble Orchards, Devon.*

STRAWBERRIES AT THE SAINTS, ALRESFORD, HANTS.—In *Gard. Chron.*, August 29, 1914, p. 158, I gave particulars of a plantation of Strawberries here (the place was then known as Upton), and in view of this my second year's experience with the same plantation may be of interest. I need not recapitulate my methods. The newer varieties tried in addition to the three selected varieties, International, Maincrop and Utility, received precisely similar treatment to last year's plants, that is they were planted in ground trenched the previous autumn, and which carried a heavy crop of Peas. The old plants, put out in autumn, 1913, were top-dressed early in this year with short manure, otherwise owing to shortness of labour they received very little attention, but I had a heavy crop of fairly good berries. The weather was somewhat similar to last year—excessive drought prevailed for some weeks before picking commenced until the season was well advanced, consequently the earliest fruits were lacking in size and very tart to the palate, but after the first rains the flavour improved immensely. As my earliest varieties, King George V. and Royal Sovereign, were two-year-old plants I was a few days later in picking (June 8 instead of June 3). Bedford Champion as a two-year-old cropped much more heavily and the berries were of good shape, and a large proportion of them were of dessert size; none was excessively large, but the flavour was distinctly better than last year, and I shall give it an extended trial. Bountiful (Laxton) did best of the new varieties. The fruits were early, large, very rounded in shape (an improvement on The Bedford), and of a very bright colour. The variety is one with possibilities. Epicure was also a new variety. The fruit is of medium size but of good flavour, one plant especially being remarked on for its delicious fruits. Fillbasket cropped, I think, more heavily than usual, and its flavour was distinctly good. This is a variety I cannot bring myself to discard. Givons' Late Prolific is a good late variety, but will eventually, I think, be superseded by Utility. International, both on young and old plants, did extremely well, fully upholding the praise I gave



FIG. 73.—CATTLEYA LADY VEITCH.
(See Awards by the Orchid Committee, p. 222.)

member seeing them. Certain limited areas in England, however, give less favourable reports. This may be due to many different causes, such as the shortage of labour and the consequent lack of attention in the matter of pruning or the spraying so essential to combat the ravages of insect pests. Indeed, the cause of below-average crops in certain areas is generally attributed to mildew and damage by insect life. This danger would have undoubtedly been more serious but for the extremely heavy rainfall of July, which cleansed the trees. The war should serve to bring home to us the importance of the Apple as a wholesome food, and drink (in cyder form). Certain areas of England can produce the finest Apples in the world, alike for dessert, food and drink. But how rarely do we see such attention

as a home beverage in bottle or barrel. Certainly English cyder makers lead the world, and at this juncture it may be interesting to refer to some recent experience I had with cyder making in Germany. The largest cyder manufactories are at Saxonhausen, close to Frankfurt-on-Main. Apples were, relatively speaking, scarcer than Grapes that year, and were being imported from Switzerland at £7 per ton. There had actually been some convictions of retailers for substituting Grape juice for "apfel wein," as the former was so much cheaper. I did not find the machinery used in the German cyder factories equal to that of modern English concerns, but the cyder cellars, which were huge caves arched over with enormous stones, were ideal. In Germany the residuum ("pomace," as we call it, and

it last year as the best of the newer kinds. Its flavour is first-class, and in colour and size of berry it easily comes first, while it is one of the best croppers I have. King George V. cropped well, but fails to oust Royal Sovereign, a variety it closely resembles. Leader is a good, compact variety, a tremendous cropper, which with great reluctance I have decided to discard as I consider it in general superseded by International and Maincrop. The last is, perhaps, hardly up to last year's standard, but there is little doubt that where crop is a consideration Maincrop is a valuable variety. Olympia may prove suitable for some districts; the flavour certainly is good, but here the plants only exist. The fruits are insignificant and the crop is small. Pineapple is the best flavoured variety on the bed, but the fruit is very small. The Pine flavour, however, is superb, and I shall give the variety another trial on that account. Rival is a handsome, dark scarlet berry and is a good cropper, but has no outstanding merits, a remark which also applies to The Earl, and in competition with other varieties they cannot hold their own. Of Royal Sovereign I need only say that it has been as good as ever, and higher praise than this it is scarcely possible to give. The Admiral (Laxton) and The Duke (Laxton) were two new varieties, and scarcely did well enough to be usefully criticised, but a trial in 1916 will be of more value in judging their merits. The Bedford is a failure. The foliage is small and unhealthy-looking, and the fruit is rarely large enough for dessert. Last year The Queen was only mediocre, but this year the fruit has been much larger and the crop very heavy. The fruit is a light colour, after the manner of Fillbasket, but the flesh is much firmer, and I consider it a very useful variety. Utility, which last year shared with International the honours as being the two best of the newer varieties, has, if anything, enhanced its reputation. Its pointed, shapely fruits are dark but not dull in colour, very handsome, and in shape and size leave nothing to be desired. The berries are firmer in texture than Givons' Late Prolific, and the plant continues in bearing over a long period. I have for some years pinned my faith to Royal Sovereign for indoor forcing, but last year decided to give King George V. a thorough trial. In October the plants were making splendid crowns, but circumstances over which I had no control—in other words, the war—reduced my staff by over fifty per cent., and amongst other things forced Strawberries were abolished for the season, and I was extremely sorry to part with such a likely batch of plants. Frank A. Edwards, *The Saints Gardens, Alresford, Hampshire.*

THE TRANSFUSION OF SAP.—As bearing on my remarks on the transfusion of sap in *Gard. Chron.*, September 11, p. 173, I have authority to send you the following letter from Mr. G. P. Berry, Board of Agriculture, London:—"Dear Sir,—Without offering any solution or suggestion on the above subject, the following facts may prove interesting. A plantation of Doyenné du Comice in the hands of an eminent grower at Chart Sutton, near Maidstone, has for several years been very disappointing as to crop. The plantation is arranged somewhat as follows: Several acres of Doyenné du Comice are planted between large blocks of Conference and Fertility; the trees are bush trees on the Quince, 12 feet apart, with one on the free stock at each 24 feet; the latter would become the permanent stock. An attempt was made last season to convey pollen from the adjoining blocks of Conference and Fertility, boys with rabbits' tails carrying the pollen of the two varieties on to several lines of the Doyenné trees. The result was, however, very disappointing, there being no set of fruit. The next advice was to crown-graft about one tree in six with Glou Morceau (which has been proved in other districts to be a good polleniser for Doyenné du Comice). This was carried out this spring, and in addition grafts of Clapp's Favourite and others were introduced. The result this season is that the portion of the grafted trees below the grafts are bearing heavily, while the ungrafted trees are almost fruitless." Robert Holmes, *Norwich.*

HORTICULTURAL TRADERS AND PROPOSED NEW POSTAL RATES.

A MEETING of over 100 representatives of the seed and nursery trade in this country took place on Tuesday last in the Hotel Windsor, Westminster. The meeting was summoned by Mr. Arthur Sutton, of the firm of Sutton and Sons, who had addressed telegrams to the representatives of the chief seed and nursery houses, the matter to be discussed being one of urgency. The object of the meeting was to consider what steps could be taken to influence the Chancellor of the Exchequer in the direction of the abandonment of the proposed alterations in postal rates.

Mr. Sutton, on the proposition of Mr. Gilbert Beale, was invited to take the chair, and after explaining the need for urgency he announced that the Council of the Horticultural Trades' Association was holding a meeting simultaneously in order to consider the advisability of taking action. It was agreed that any proposal put forward by the Association would form the basis of discussion by the meeting.

Mr. Sutton described the harm that the proposed postal changes would inflict on the horticultural trade if they were accepted. He had been approached by the manager of one of the most important horticultural firms on the subject of taking united action in the matter, and the meeting was the outcome of that suggestion.

At this point the members of the Council of the Horticultural Trades' Association entered the room, and the chairman invited the President of the Association (Mr. W. Cuthbertson) to explain the views of the Association, remarking that he had obtained a promise from Colonel Mark Lockwood to submit any resolutions that were agreed upon to the Chancellor of the Exchequer, and, if possible, to secure an interview.

Mr. Cuthbertson said that his Council felt that they should be guided in part by any decision which might be arrived at by the special meeting. Mr. Sutton had previously submitted to the Council a number of suggestions for alternative taxes to those proposed, and the Council had given them careful consideration. They had agreed to support the principle of an increase in postal rates, for horticultural traders in general had no wish to escape their fair share of the burden of taxation. One of Mr. Sutton's suggestions had been the imposition of a special war tax of a halfpenny on every letter and parcel from one penny upwards, a plan which had already been successfully adopted in Canada. The plan would have the advantage of simplicity, and the Council had agreed to support it. Mr. Cuthbertson therefore formally moved that the joint meeting recommend, in lieu of the proposed revision of postal rates, the imposition of a halfpenny war stamp on all letters and parcels. This was seconded by Mr. R. C. Notcutt, and carried unanimously. There was some debate as to the method of bringing to the notice of the Chancellor such resolutions as might be passed, several members suggesting a deputation, but it was decided to ask Colonel Lockwood to present the resolutions, leaving it to him to decide as to the manner in which he would proceed. The meeting next discussed the advisability of urging the Chancellor to reconsider his decision to abolish the halfpenny post, an alteration which, it was pointed out, would adversely affect not only horticultural traders but also the horticultural Press. It was finally agreed to urge on the Chancellor the desirability of retaining the halfpenny post.

Colonel Lockwood's secretary, Mr. Whitwell, was present, and informed the meeting that Colonel Lockwood had promised to deliver the resolution personally unless unavoidably prevented, in which case Mr. Whitwell would himself place it in Mr. McKenna's hands.

Messrs. Cuthbertson and Sutton were asked to draft the resolutions so as to embody the points agreed upon, and to hand them to Mr. Whitwell.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 23.—A special competitive vegetable exhibition was arranged in conjunction with the fortnightly meeting held on Tuesday last in the Vincent Square Hall, Westminster. Although the competition in these vegetable classes was not so keen as might be wished, the quality was excellent throughout. Dahlias were again a feature of the floral exhibits, and the Floral Committee, in conjunction with a committee of the National Dahlia Society, granted eleven Awards to new varieties of this flower. The R.H.S. Floral Committee also granted Awards of Merit to seven other novelties. The most noteworthy exhibit was a group of *Ixora coccinea*, shown by Lady NUNBURNHOLME (gr. Mr. F. Jordan), for which a Gold Medal was awarded.

The Orchid Committee recommended two First-class Certificates and one Award of Merit to novelties, and awarded eight medals to collections.

The awards made by the Fruit and Vegetable Committee included two Gold Medals for collections of vegetables, and an Award of Merit to a new culinary Apple.

At the three o'clock meeting in the Lecture Room an address on "Early-Flowering Chrysanthemums" was delivered by Mr. Robert Fife.

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. C. T. Drury, J. Green, W. J. Bean, G. Reuthe, J. W. Moorman, J. F. McLeod, W. Howe, T. Stevenson, W. Bain, C. Dixon, H. J. Jones, C. E. Shea, A. Turner, C. E. Pearson, W. P. Thomson, G. Paul, J. Dickson, C. R. Fielder, E. H. Jenkins, G. Harrow, R. C. Notcutt, J. W. Barr, W. Cuthbertson, R. W. Wallace, and E. A. Bowles.

AWARDS OF MERIT.

Aster King Albert.—A seedling variety with very double flowers, each more than an inch across, and of a deep Parma-violet colour. The plant grows from 1½ to 2 feet high, and has a light and graceful habit. Shown by Mr. E. BALLARD, Colwall, Herefordshire.

Rose Hadley.—A.H.P. variety resembling Fisher Holmes in colour, the tone being deep velvety-crimson. The flower is highly scented, like General McArthur. Shown by Messrs. STUART LOW AND CO.

Ceanothus George Simon.—A late autumn-flowering hybrid *Ceanothus* of free habit, and having erect, branching trusses of deep rose-pink blossoms borne in great profusion. Shown by Messrs. J. CHEAL AND SONS.

Abutilon Triumph.—A very attractive hybrid with large shell-pink flowers, consisting of two rows of petals, with veins of deep rose, and an ivory-white centre tinged with faint green. Shown by Mr. C. TURNER.

Nerine Vivid.—A variety with vivid scarlet flowers borne in trusses of twelve or more on long, stout, erect scapes.

N. Rosebud.—This variety has a much looser umbel of flowers than the last. The deeply bell-shaped blossoms of dark-rose colour fading to white from the middle downwards to the base, are very attractive. Both these *Nerines* were shown by Messrs. BARR AND SONS.

Escallonia montevidensis (syn. *floribunda*).—This species forms a shrub, and is suited for growing against a warm wall. At Warley Place the plant grows some 10 to 12 feet high and flowers profusely each season. Each of the upper side shoots terminates in a conical thyse of white flowers, which greatly resemble those of *Choisya ternata*. The ovary is greenish-black, and there is a prominent row of golden stamens. The dark, glossy-green leaves are ovate in shape. The species is not common in gardens, although it was introduced in 1827. Shown by Miss WILLMOTT, Warley Place, Essex.

The following varieties of Dahlias received the R.H.S. Award of Merit and the Certificate of the National Dahlia Society:—

Dahlia Carron.—An erect, free-growing Collette variety, with broad scarlet florets tipped with yellow, and a very distinct collar of long,

narrow, yellow segments splashed with red. Shown by Messrs. DOBBIE AND Co.

D. Saucy.—A large, self-coloured Colletterette variety, of pale-yellow colour fading to white, with a conspicuous yellow disc.

D. Landmark.—A distinct Colletterette variety, with crimson florets edged and tipped with yellow, the collar being bright yellow slightly splashed with crimson.

D. Diamond.—A large single Decorative variety, of velvety crimson colour.

D. The Boy.—A miniature Cactus variety, with white florets running to yellow-green in the centre.

D. The Girl.—A pearly white variety, edged with deep red.

These five shown by Mr. T. WEST

D. Sceptic.—A fine, loose-petalled garden Cactus variety, of mauve-purple colour shading to orange-brown at the base.

D. Ursa Major.—An attractive Cactus bloom with golden florets edged and streaked and splashed with crimson.

D. Searchlight.—A beautiful self-coloured

seen at these shows, and the group was a revelation to many visitors.

Silver-gilt Banksian Medals to Messrs. B. R. CANT AND SONS, Colchester, for Roses. This meritorious exhibit included choice blooms of the varieties A. R. Goodwin, orange-red, fading to pink; Mrs. E. Powell, a fine red Rose, with good constitution; Alexandra Zariñ, coloured apricot-tinted rose, the blooms opening single; Rayon d'Or and Lady Hillingdon, apricot-yellow. Messrs. H. J. JONES, LTD., Hither Green, Lewisham, for Michaelmas Daisies. This was the best group of its kind, the method of staging being highly pleasing. Mr. J. B. RIDING, Chingford, for Dahlias; the group featured the large decorative types, such as the Paeony-flowered and decorative; there were also many novelties of the Colletterette and Star sections. Boeldin, white; Maybeer, purple; Mrs. J. C. Vaughan, yellow; and Pierre Le Blond, crimson-maroon with white tips, are all fine varieties of the Paeony-flowered section.

Silver Flora Medals to Mr. E. BALLARD, Colwall, Herefordshire, for Michaelmas Daisies.

the varieties. Messrs. H. B. MAY AND SONS, Edmonton, for batches of Veronicas and Bouvardias associated with choice Ferns. Messrs. J. PIPER AND SONS, Bayswater, for climbing plants and shrubs. Amongst many beautiful varieties of Clematis, the pale blue Lady Northcliffe was conspicuous and Clematis Armandii, with its handsome trifoliate leaves; Ilex Pernyi was shown in fruit, the berries being scarlet, somewhat like the common Holly; many species of Vitis were included, and the fragrant Lonicera Halleana. Mr. W. WELLS, JUNR., Mersham, for hardy flowers. Mr. J. T. WEST, Brentwood, for Dahlias. Messrs. T. S. WARE, LTD., for Dahlias and border Asters. Mr. JAMES BOX, Lindfield, Haywards Heath, for a pretty corner group of hardy flowers. Messrs. J. CHEAL AND SONS, Crawley, for ornamental trees and shrubs and Dahlias; amongst many beautiful crabs, the Dartmouth and John Downie varieties were conspicuous. Messrs. STUART LOW AND CO., Enfield, for Carnations.

Bronze Banksian Medals to Messrs. W. CUTBUSH AND SON, Highgate, for hardy flowers. Messrs. WATERER, SONS, AND CRISP, LTD., Twyford, for Michaelmas Daisies. Rev. J. H. PEMBERTON, Havering-atte-Bower, Romford, for seedling Roses, including a beautiful cluster Rose of apricot and gold colour named Calliston; and Mr. H. BANNISTER, Royston, Hertfordshire, for Ferns, Salvia splendens, Pride of Zurich and Verbenas. The Ferns included a fine-tinted variety of the Farleyensis type named Adiantum gloriosum Lemkesii, the young frond being a shade of rose.

OTHER NOVELTIES.

Miss WILLMOTT showed a flowering plant of the new *Ceratostigma Willmotteana*, which forms a bush about 5 feet high, and bears a mass of Plumbago-like flowers at the ends of the shoots.

A blue-flowered *Clerodendron* was shown by ELIZABETH LADY LAWRENCE, Burford, Dorking (gr. Mr. W. Bain). It is a new species from Uganda, and was shown under the name *C. ugandense*. The plant thrives and flowers freely out-of-doors at Burford in summer, but needs a warm house in winter.

Mr. ELISHA J. HICKS, Twyford, showed a beautiful new hybrid Tea Rose named Mrs. John Foster. The blooms are of beautiful form and delightfully fragrant. The colour is cerise with a faint purple sheen.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Mr. Jas. O'Brien (hon. secretary). Sir Jeremiah Colman, Bart., Sir Harry J. Veitch, Messrs. Gurney Wilson, W. Bolton, J. Wilson Potter, Stuart Low, F. Sander, F. J. Hanbury, T. Armstrong, J. Charlesworth, W. H. Hatcher, W. P. Bound, A. Dye, W. H. White, S. W. Flory and R. A. Rolfe.

AWARDS RECOMMENDED.

FIRST-CLASS CERTIFICATE.

Cattleya Lady Veitch (see fig. 73) (*Luddemanniana alba* × *Warneri alba*), from Messrs. SANDER AND SONS, St. Albans. This is a charming flower of fine shape and pure white, with lemon-yellow disc to the lip. The plant, which was small and flowering for the first time, bore evidence of developing into one of the best pure white Cattleyas yet raised, the influence of *C. Luddemanniana* in the breadth of the petals, more tubular base to the lip and silky texture of the flower making it perfectly distinct from the white labiate crosses usually seen.

Cattleya King George (*triumphans* × *Dowiana Rosita*), from Messrs. FLORY AND BLACK, Slough. *C. triumphans* being between *C. Rex* and *C. Dowiana*, this very handsome hybrid adheres closely to a fine form of *C. Dowiana*, the sepals and petals being pale yellow and the lip, which is wonderfully expanded and frilled at the margin, deep mulberry red, with a delicate gold tracery from the base.

AWARD OF MERIT.

Brasso-Cattleya Mars (*C. Maggie Raphael alba* × *B.-C. Mrs. J. Leemann*), from Messrs. ARMSTRONG AND BROWN, Tunbridge. This is a pretty addition to the Brasso-Cattleyas and in



FIG. 74.—NEW APPLE EDWIN BECKETT.

(See Awards by the Fruit and Vegetable Committee, p. 223.)

pale-lemon Cactus variety, with incurved and spirally twisted florets.

D. Garland.—A pretty Colletterette variety, having broad deep-crimson guard florets and a collar of long, erect yellow florets splashed with crimson.

These four were shown by Messrs. J. SIREDWICK AND SON.

D. Madonna.—A very large Decorative variety with snow-white flowers 8 to 9 inches in diameter, but sometimes as much as 12 inches, borne stout, erect stalks. Shown by Messrs. T. S. WARE, LTD.

D. Erin.—A Cactus variety of golden-chestnut colour. Shown by Messrs. BURRELL AND Co.

Groups.

The following medals were awarded for collections:—

Gold Medal to Lady NUNBURNHOLME, Water Priory, York (gr. Mr. F. Jordan), for a floor group of *Ixora coccinea*. The exhibit was of the most imposing character, the plants being superb specimens and staged with great skill. *Ixoras* are not often

Many of the varieties were new, a selection being *Cloudy Blue*, a double flower of pale heliotrope-blue; No. 155, similar to the last, but a much deeper shade of blue; *Queen of the Belgians*, white; and *Edith Goodwin*, a beautiful single flower of rich blue colour. Messrs. DOBBIE AND Co., Edinburgh, for border Chrysanthemums, including a white sport of *Polly*; *Radiance*, reddish-bronze; *Carrie*, yellow; and Mrs. E. Perriere, pink. Mr. G. W. MILLER, Wisbech, for hardy border flowers. Messrs. W. PAUL AND SON, Waltham Cross, for Roses. Messrs. W. WELLS AND Co., LTD., Merstham, for Chrysanthemums, of which the more notable were *Framfield Early White*, *Fée Parisienne* (pink), and *Early Buttercup*; and Messrs. CARTER PAGE AND Co., London Wall, for Dahlias.

Silver Banksian Medals to Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering Carnations. Messrs. GEO. BUNYARD AND Co., LTD., Maidstone, for hardy flowers. Messrs. F. CANT AND Co., Colchester, for Roses, *Irish Elegance*, Mrs. A. E. Coxhead (purplish-rose), *Rayon d'Or* and *White Maman Cochet* being a selection of

shape a great improvement. The sepals and petals are white, and the well-rounded, fringed lip rose-pink, with yellow disc. (Lindley Medal.)

To Messrs. SANDER AND SONS, St. Albans, for a noble specimen of *Vanda Sanderiana*, the unique dwarf plant selected as the best from their importation several years ago, and since grown into a perfect specimen, bearing six spikes, together having forty-two large flowers fully expanded and one spike in bud.

GENERAL EXHIBITS.

Sir JEREMIAH COLMAN, Bart, Gattin Park (gr. Mr. Collier), showed *Brasso-Cattleya* Mrs. J. C. Hurst var. *alba* (B. *nodosa* × C. *Mariae ampliata*), with a spike of pure white flowers; C. *Alcimedea coerulea*, a light variety with violet blotch on the lip; *Laelio-Cattleya* King Leopold (C. *Leopoldii* × L.-C. *Callistoglossa*) and L.-C. *Eileen* (C. *amabilis* × L.-C. *marginata*).

Dr. MIGUEL LACROZE, Bryndir, Rochester Lane, S.W. (gr. Mr. Cresswell), was awarded a Silver Banksian Medal for an effective group, principally of fine varieties of *Odontoglossum grande*, of which there were about forty spikes, some being specially dark varieties.

R. G. THWAITES, Esq., Chessington, Streatham (gr. Mr. Hannington), was awarded a Silver Banksian Medal for a group in which were a fine scarlet form of *Sophro-Cattleya Blackii*, the pretty S.-C. *Ruby* (S. *grandiflora* × C. *Schilleriana*) varieties of *Cattleya Roupelliana*, C. *Euphrasia*, C. *Hardyana* and C. *Adula*.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), secured a Silver Banksian Medal for an extensive and very interesting group, with some good *Brasso-Cattleyas*. B.-C. *Big Ben* (B. *Digbyana* × C. *Thurgoodiana*) being a good new form, of delicate tint; *Laelio-Cattleya* Hector and other *Laelio-Cattleyas*, *Cattleya* Queen Elizabeth, good C. *Fabia*, C. *Iris*, various *Odontoglossums*, including O. *bictoniense album* and many interesting species.

PANTIA RALLI, Esq., Ashted Park, Surrey, sent *Vanda coerulea* Ashted Park variety, a finely-grown plant with a spike of fifteen large clear blue flowers.

E. R. ASHTON, Esq., Camden Park, Tunbridge Wells, showed a fine specimen of *Cattleya Iris* with two very strong spikes.

H. F. GOODSON, Esq., Fairlawn, Putney. (gr. Mr. G. E. Day), sent *Odontoglossum Goodsonianum*, a very pretty O. *Rossii rubescens* cross near to O. *Jeanette*.

Messrs. JAS. CYPHER AND SONS, Cheltenham, staged a very pretty group, for which a Silver Banksian Medal was awarded. At the back were the elegant sprays of *Oncidium incurvum* with the pure white form, good O. *varicosum* Rogersii, and some graceful *Epidendrums*. In front were fine forms of *Odontoglossum grande* and other *Odontoglossums*, *Miltonia Phalaenopsis* with seven flowers, *Cattleya Dusseldorfei* Undine and other *Cattleyas*, varieties of *Dendrobium Phalaenopsis*, *Vanda coerulea*, a good selection of *Cypripediums* and *Masdevallias*.

Messrs. CHARLESWORTH AND Co., Haywards Heath, were awarded a Silver Banksian Medal for a good group in which were noted as remarkable some seedling *Odontoglossums* and *Odontiodas*, finely-coloured *Vanda coerulea*, *Laelio-Cattleyas*, a pretty white-petalled form of L.-C. *Britannia* being specially attractive, *Cattleya Sirius* and other *Cattleyas* and a fine white form of *Catasetum Bungei*.

Messrs. SANDER AND SONS, St. Albans, were voted a Silver Banksian Medal for a group in which were a selection of brightly-coloured *Cattleya Mantinii*, C. *General Russky* (*amabilis* × *Dowiana*), a pretty new form; *Brasso-Cattleya Pallas* (B.-C. *Digbyana-Mossiae* × C. *Warszewiczii Sanderiana*), also new, and others flowering for the first time.

Messrs. J. AND A. McBEAN, Cooksbridge, staged a very effective group of well-grown Orchids, for which a Silver Banksian Medal was awarded.

Messrs. STUART LOW AND Co., Jarvisbrook, Sussex, gained a Silver Banksian Medal for a group of *Cattleyas*, *Vanda coerulea*, *Oncidium varicosum* and other showy Orchids. The

species included *Cyanoche chlorochilon* and C. *Pervianum*.

Messrs. ARMSTRONG AND BROWN, Tunbridge Wells, showed various new seedlings, including *Odontoglossum crispum Memoria J. S. Moss*, its one first flower being large and of fine shape, and heavily blotched with red-brown; *Brasso-Laelio-Cattleya General French* (L.-C. *Geo. Woodhams* × B.-C. *Thorntonii*), a perfectly-formed and attractive flower; *Odontioda Gloss* (Odm. *triumphans* × Oda, *Charlesworthii*) and a fine *Cattleya Armstrongiae*.

Messrs. HASSALL AND Co., Southgate, showed the new and fine *Cattleya Naidia* (*iridescens* × *Hardyana*), with handsome yellow lip, with ruby margin; C. *Beatrice rubra*, *Brasso-Cattleya Nestor* (C. *labiata* × B.-C. *Madame Chas. Maron*), and *Laelio-Cattleya Pearl* (L.-C. *Norba* × C. *Gaskelliana alba*).

Messrs. FLORY AND BLACK, Slough, showed *Brasso-Cattleya Doris* (B.-C. *Madame Chas. Maron* × C. *Lord Rothschild*), very large, rosy-lilac, with yellow disc; *Laelio-Cattleya Soulangé* (L.-C. *Lustre* × C. *Dowiana*) and L.-C. *Rosetti* (*Antigone* × *bletchleyensis*), both promising hybrids.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Messrs. W. Bates, G. Woodward, J. Basham, A. Grubb, H. J. Wright, A. Bullock, E. A. Bunyard, J. Udale, John Harrison, H. Somers, Rivers, Owen Thomas, A. H. Pearson and W. Pope.

AWARD OF MERIT.

Apple Edwin Beckett (see fig. 74).—A large culinary variety raised from a pip sown by a cottager at Aldenham. We are informed that the tree is of upright habit, a free grower, and prolific cropper. The fruit is greenish-yellow, heavily flushed with red; the largest specimens had a circumference of 12 inches and measured 4½ inches from stalk to eye. Shown by Mr. EDWIN BECKETT, Aldenham House Gardens.

OTHER NOVELTIES.

Messrs. LAXTON BROS., Bedford, again exhibited seedling Plums. The more interesting were Bedford Champion (Sultan × Monarch), a very large dark purple culinary variety; Laxton's Prune (Victoria × a late Prune), of medium size, almost black, and of agreeable flavour; Golden Globe (Denniston's Superb × Jefferson), a variety not much larger than a Bullock, with sweet flavour; and Yellow Ball (Reine Claude × Denniston's Superb).

COLLECTIONS.

The following medals were awarded for groups:—

Gold Medals to Messrs. SUTTON AND SONS, Reading, for a collection of vegetables. The exhibit comprised 214 different varieties. The method of arrangement left nothing to be desired; indeed, the group was most attractive. Leeks, Onions, Celery, Cauliflowers, festoons of Peas and Butter Beans were arranged at the back, while large and small mounds of black velvet carried magnificent samples of Potatoes, Turnips, Beetroot, Tomatoes, Onions, Runner Beans, Aubergines (white and purple), black and red Radishes, Cabbage Lettuces and Endive, Chinese, Globe and Jerusalem Artichokes, Giant Parsnips and Carrots, tapering roots of Salsafy and Scorzonera, pyramids of Mustard and Cress, vertical columns of Brussels Sprouts, while other spaces were devoted to Kohl Rabi, Cucumbers, Garlic, Cabbages, Savoy and Capsicums. Twelve bulbs of Ailsa Craig Onions were remarkable, not only for their size and weight (nearly 3lb. each), but also for the fact that each one seemed to be an exact replica of the other in every respect.

Messrs. DOBBIE AND Co., Edinburgh, for a collection of about eighty different varieties of vegetables, most of them being tastefully set out in shallow wicker baskets lined with fine curled Parsley. Leeks, Onions, Cauliflowers, Celery and Winningsdahl Cabbage, arranged along the back, were splendid examples. The Parsnips, Carrots, Beetroots and Cucumbers were remarkably fine, and there were splendid Peas, Beans, Marrows, Radishes, Brussels Sprouts and Broccoli. The Tomatoes, piled up here and there

in mounds, added a bright touch of colour to a fine display.

Silver Knightian Medals to Mr. J. C. ALL-GROVE, Langley, for nine maiden trees of Apple Rev. W. Wilks, some of them with three fruits, each close on 1lb. in weight. Messrs. DICKSON AND ROBINSON, Manchester, for magnificent bulbs of Onion Premier; Messrs. G. BUNYARD AND Co., Ltd., Maidstone, for a collection of Figs and trained pot Vines; and LADY NUNBURN-HOLME, Waiter Priory, York (gr. Mr. F. Jordan), for Apples of magnificent quality. The fruits of Cox's Orange Pippin were amongst the largest and best we have seen, whilst those of Emperor Alexander, Lady Henniker, Rival and Gascoyne's Scarlet Seedling were almost as remarkable.

Silver Banksian Medals to THE CHURCH ARMY, per Mr. H. T. Bennett, 55, Bryanston Street, London, for a collection of vegetables grown on vacant building sites in London, and the PURFLEET SCHOOL GARDENS, Essex, for a collection of fruits grown in the school gardens.

VEGETABLE COMPETITION.

Prizes were offered in 40 classes for vegetables, of which 30 were for single dishes. The "Sutton" Challenge Cup and £5 were offered as the 1st prize in a class for 12 distinct kinds, to be selected from a list enumerated in the schedule. The Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Edwin Beckett), won easily with a magnificent collection, comprising Ailsa Craig Onions, Perfection Tomatoes, Dwarf Gem Brussels Sprouts, Tender and True Parsnips, Gladstone Peas, Windsor Castle Potatoes, Sutton Black Beets, New Red Intermediate Carrots, Perfection Leeks, Aldenham Pink Celery, Autumn Mammoth Cauliflowers and Ideal Cucumbers. Every kind was excellent. 2nd, Mr. TOM JONES, Ruabon; 3rd, Sir DANIEL COOCH, Bart., Chelmsford (gr. Mr. W. Heath).

For 9 distinct kinds W. H. MYERS, Esq., Swanmore Park, Bishops Waltham (gr. Mr. C. Ellwood), excelled with excellent produce, comprising The Sutton Onions, Favourite Carrots, Best of All Tomatoes, Dwarf Gem Brussels Sprouts, Gladstone Peas, Superb Pink Celery and Early Giant Cauliflowers; Lord NORTH, Wroxton Abbey, Banbury (gr. Mr. E. R. Jones), followed closely, his Gladstone Peas, Dover Castle Potatoes and Scarlet Champion Horn Carrots being unusually good.

Miss E. L. BRADSHAW, Steeple Aston, Oxfordshire (gr. Mr. R. Wadham), had the better of two exhibits in the class for 6 kinds, distinct, showing splendid bulbs of A1 Onion, Satisfaction Potatoes, New Red Intermediate Carrots, Superb Pink Celery, Best of All Tomatoes and Early Giant Cauliflowers.

Potatoes.—There were two classes for Potatoes—for 12 distinct varieties and 6 distinct varieties, respectively. Competition in both classes was keen. Mr. G. THORN, Wellsborough, Kent, excelled in the larger class with good tubers of such varieties as Dover Castle, The Chapman, Duchess of Cornwall, Mayflower and Mr. Bresse; 2nd, Rev. McMURRIE, Woburn Park, Weybridge (gr. Mr. A. Basill), with larger specimens, but not so even in surface, the eyes being somewhat deeply placed.

For 6 varieties, distinct, Mr. PIKE, King's Langley, was placed 1st, with big tubers of Duchess of Cornwall, Erin's Queen, King Edward VII., Up-to-Date, Factor and Irish Hero; 2nd, Mr. D. W. BEDFORD, Berkhamsted.

Onions.—The schedule called for 6 varieties, distinct, to comprise two dishes of the Ailsa Craig type, one of red, silver-skinned, James's or other long-keeping, brown Globe variety and 1 White Spanish type respectively. The Hon. VICARY GIBBS (gr. Mr. E. Beckett) won easily with splendid bulbs of Improved Reading, Crimson Globe, Silver Globe, Ailsa Craig and Triumph; 2nd, Mr. R. STAWARD, Panshanger, whose largest bulbs were of the varieties Coconut, Ailsa Craig and Nuneham Park.

Salads.—There were two classes for salads. The more important called for a collection of 9 distinct kinds. Mr. BECKETT again led easily with A1 Tomatoes, Ideal Lettuces, Aldenham Pink Celery, Black Beets, Ideal Cucumbers, Endive, Mustard and Cress; 2nd, F. BREE,

Esq., Hardwick Grange, Shrewsbury (gr. Mr. J. Taylor), his collection containing superb heads of Solid White Celery, good Lettuces and Tomatoes.

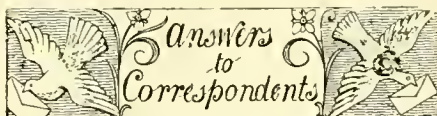
For 6 distinct kinds Lord NORTH was placed 1st for an ideal exhibit comprising Delicacy Cucumbers, Black Beets, White Olive Radishes, A 1 Tomatoes, Superb Pink Celery and Heartwell Lettuces; 2nd, Mr. W. H. MYERS.

A class for uncommon vegetables proved very interesting, and there was a good competition between Mr. BECKETT and Mr. JAMES, who were placed in this order. Mr. BECKETT showed Scorzonera, Red Capsicums, Salsafy, Aubergine, Celeriac and Kohl Rabi; Mr. JAMES' Celeriac and Salsafy were unusually fine.

SINGLE-DISH CLASSES.

The prize winners and varieties in the single-dish classes were as follows:—*Scarlet Runner Beans*.—1st, Mrs. JENNER, Wenvoe Castle, Cardiff (gr. Mr. W. Wheeler), with Exhibition; 2nd, Mr. BECKETT, with Best of All. *French Climbing Beans*.—1st, Col. KNOX, Alton (gr. Mr. W. West), with Tender and True; 2nd, Mr. R. STAWARD, Panshanger Gardens. *Dwarf French Beans*.—1st, Col. KNOX, with Canadian Wonder; 2nd, Mr. BECKETT, with the same variety. *Globe Beet*.—1st, Mr. F. BIBBY; 2nd, Col. KNOX. *Long Beet*.—1st, Lord NORTH, with Sutton's Black; 2nd, Mr. BECKETT. *Brussels Sprouts*.—1st, Mr. BECKETT, with Dwarf Gem; 2nd, Mr. W. H. MYERS, with the same variety. *Three Plants of Brussels Sprouts*.—1st, Mr. E. BECKETT, with Dwarf Gem; 2nd, Mr. STAWARD, with Matchless. *Cabbage*.—1st, Sir DANIEL GOOCH, Chelmsford (gr. Mr. W. Heath), with Harbinger. *Savoy*.—1st, Mr. BECKETT, with Best of All. *Cauliflower or Broccoli*.—Much the best heads were shown by Mr. W. H. MYERS, the variety being Early Giant. The curd was snow-white and very compact. 2nd, Mr. BECKETT, with Autumn Mammoth. *Celeriac*.—Mr. STAWARD won easily, having much the largest stems of this vegetable in the exhibition. *White Celery*.—1st, Mr. E. E. PALMER, Basingstoke (gr. Mr. H. E. Wallis), with massive solid heads of Solid White variety; Lord NORTH followed with the same variety, and this nobleman excelled in the class for *Red Celery*. *Cucumbers*.—The variety Ideal was shown in the 1st and 2nd prize exhibits from Mr. W. H. MYERS and Mr. E. BECKETT, respectively. Mr. BECKETT showed magnificent *Lucks* of the Prizetaker variety and won the 1st prize easily, followed by Mr. STAWARD. *Marrow*.—The premier prize was awarded for the Striped variety, shown by Miss E. L. BRADSHAW, Steeple Aston (gr. Mr. R. Wadham). Mr. BECKETT was the only exhibitor of *Mushrooms*, and he was awarded the 1st prize. The best dish of *Onions* was Premier, shown by Mr. E. E. PALMER, Basingstoke, and Mrs. JENNER followed with the same variety. Lord NORTH easily beat his rivals in the class for *Parsnips*, the roots of the Student variety measuring 3 feet in length. The finest *Carrots* were New Red Intermediate, this variety being shown by Mr. BECKETT and Lord NORTH, who won in this order. Mr. BECKETT also excelled for *Stump-rooted Carrots* with Favourite. *Peas*.—The Gladstone variety is the most popular late exhibition Pea, and this figured in the 1st and 2nd prize exhibits, shown by Lord NORTH and Mr. D. W. BENFORD, Berkhamsted, respectively. *White-fleshed Turnips* were best shown by Rev. McMURDIE in Early Six Weeks, and the best *Green Top Turnips* by Mr. BECKETT in Green Top, whilst the finest *Yellow-fleshed Turnips* were Golden Ball, exhibited by Mr. F. L. PIKE, King's Langley. Abundance, shown by Mr. D. W. BENFORD, was adjudged the best *White Potatoes*, and King Edward VII., shown by Rev. McMURDIE, the best *Coloured Potatoes*. Mr. STAWARD excelled for *Kale*; Mr. F. BIBBY for *Red Tomatoes*, with Eclipse; and Mr. BECKETT for *Yellow Tomatoes*, with Golden Perfection. The remaining class was for any vegetable not enumerated in the schedule, and the judges awarded the 1st prize for mammoth stems of the Silver Seakale Beet shown by Lord NORTH.

The Champion Challenge Cup, offered for the largest number of 1st prize points, was won by Mr. W. H. MYERS.



APPLE DISEASED: J. G. W. See reply to *Eorrest* in our issue for September 25, p. 208.

APPLE ECKLINVILLE SEEDLING FAILING TO CROP: H. B. The fruits of this variety of Apple do not set freely, especially when the trees are grown in large batches by themselves. The variety Bismarck produces plenty of good pollen, and Bramley's Seedling is also a good polliniser, so that trees of these two varieties should be mixed with the plantation of Ecklinville Seedling. Many growers have discarded Ecklinville Seedling entirely, but in your case it would probably suffice if a few of the trees were headed down this winter and regrafted in spring with Bismarck or Bramley's Seedling. Bismarck, although a good polliniser, is a variety of low commercial value, and is also being discarded by many commercial growers. But there is always a demand for Bramley's Seedling, and where Ecklinville Seedling is crown-grafted with Bramley's, the fruits of the latter are earlier, and often develop a brilliant colour. In fact, some commercial growers have what they term a Red Bramley's Seedling. The following are the average dates of blooming in the South of the three varieties:—

	Date of opening.	Date when finished.
(1) Bismarck	April 22	May 8
(2) Bramley's Seedling	April 24	May 8
(3) Ecklinville	April 28	May 11

It is an advantage to have the polliniser a little earlier in bloom than the variety to be pollinated.

APPLE WITH BROWN PATCHES: C. P. and Co. The Apple is affected with the disease Gloeosporium fructigenum (Bitter rot), for which there is no known remedy. It is advisable, however, to remove all diseased Apples from the trees and ground and burn them. American cultivators apply the ammoniacal copper carbonate and potassium sulphide, the latter at the strength of one half-ounce to a gallon of water, spraying the trees at intervals, commencing in the middle of July.

BEAN: R. T. W. The variety of Scarlet Runner is known as Purple-podded.

CHRYSANTHEMUMS WITHERING: T. W. There is no disease present, and the plants appear to have suffered from drought.

EELWORMS IN A VINE BORDER: F. T. The infestation may be due to infection from the new compost, but it would be a difficult matter to decide definitely whether this is the case or not. Eelworms are very minute organisms, and may be carried in soil on the boots or spread from other plants staged temporarily in theinery. In any case you should sterilise by steaming the fresh compost and treat the border with the sulphate of potassium solution as recommended on p. 208.

GRAPES DISEASED: W. T. The Grapes arrived in a state of pulp, and we are therefore unable to diagnose the cause of their failure.

GRAPE HAMBRO COLMAN: F. The variety Hambro Colman is unknown to us. The bunch you send appears to be Gros Colman, grown in exceptionally favourable conditions.

NAMES OF FRUIT: H. S. 1, Beurré d'Amanlis; 2, Madame Treve; 3, Colmar d'été; 4, Swan's Eggs; 5, Hacom's Incomparable; 6, Bergamotte Bufo.—F. W. Gamble. Prince Engelbert.—Anxious. 1 and 6, Peasgood's Nonesuch. 2, 4, and 5. We consider these to be Cox's Orange Pippin. 3, Lady Henniker.—A. T. Harrison. Very much decayed. Possibly Williams's Bon Chrétien.—X. Y. Z. 1, Decayed. 2 and 3. Not recognised. 4, Kerry Pippin; 5, Sturmer Pippin; 6, Warner's King; 7, Potts's Seedling.—G. W. Y. Ramp-ton.—1, Duchess of Oldenburg; 2, White Paradise (syn. Lady's Finger).—B. R. Both Peach

and Plum were smashed in transit. Pear, Léon Leclerc de Laval. Mulch the soil with stable manure. The poultry dung may be used to make liquid manure.—W. M. W. Pears: 1 and 2, Williams's Bon Chrétien; 3, Louise Bonne of Jersey; 4, Marie Benoist; 5, Comte de Flandre; 6, Duchesse d'Angoulême; 7, Gansel's Bergamot; 8 and 9, Marie Louise; 10, Passe Colmar. Apples: 1, Early Joe; 2, not recognised; 3, Cox's Pomona; 4, Kerry Pippin; 5, Deans' Codlin; 7, Blenheim Pippin; 8, Cockle's Pippin; 9, Premier (syn. Prince Albert); 10, Winter Hawthornden.—S. V. Hicks. Red Astrachan.—Inquirer. 1, Grenadier; 2, Duchess of Oldenburg (syn. Borovitsky); 3, Pond's Seedling.—H. G. S. Llandudno. Marguerite Marillat.—W. K. T. L. Apples: 1, Alfriston; 2, Beauty of Kent; 3, Cellini; 4 and 5, decayed and smashed. Pears: 1, Beurré Capiaumont; 2, Fondante d'Autonne; 3, Beurré Diel; 4, Baronne de Mello; 5, not recognised.—C. E. D. 1, Early Wax; 2, Golden Harvey (syn. Brandy Apple); 3, Devonshire Quarrenden; 4, Whiting Pippin; 5, not recognised; 6, Lane's Prince Albert.—J. Garrod. A, Alfriston; b, Tibbett's Pearmain. R. F. E. 1, St. Edmund's Pippin; 2, De Neige; 3, Alfriston.—W. D. and Sons. 1, Decayed; 2, Maréchal de Cour; 3, Délices d'Angers (syn. Fondante du Panisel); 4, Comte de Flandre; 5, Léon Leclerc de Laval; 6, Comte de Lamy.—F. E. M. D. 1, Peasgood's Nonesuch; 2, Williams's Bon Chrétien; 3, not recognised; 4, the Apple is attacked by Bitter pit, which is very prevalent amongst Apples this season; no sure remedy is known; 5, Worcester Pearmain.—Matlock. Red Siberian, Yellow Siberian, Green Siberian.—D. M. The Apples are not recognised; probably a local variety.

NAMES OF PLANTS: M. A. P. 1, Helianthus decapetalus; 2, H. Miss Melish; 3, H. multiflorus fl. pl.; 4, Chrysanthemum maximum; 5, Pyrethrum uliginosum; 6, Salvia Horminum; 7, Lychnis Flos Jovis; 8, Veronica spicata; 9, Achillea Ptarmica plena; 10, Geranium Endressii, probably (send in flower); 11, Galega Hartlandii; 12, Aster Novi Belgii Purity; 13, Aster Novi Belgii Pleiad; 14, A. Novae-Angliae Melpomene; 15, A. N.-A. Mrs. J. F. Raynor; 16, A. Novi Belgii semi-plena; 17, A. Novae-Angliae roseus; 18, A. Novi Belgii Purity (thanks for 2s. for R.G.O.F. box.—Eds.).—J. W. R. 1, Pinus Laricio; 2, Fraxinus pennsylvanica; 3, Crataegus prunifolia; 4, Carya amara; 5, Crataegus coccinea var. rotundifolia.—F. N. 1, Spiraea discolor; 2, S. japonica var.; 3, Kerria japonica; 4, Polygonum sachalinense; 5, Send in flower; 6, Pinus Laricio var. nigricans; 7, P. Strobus.—P. L. G. Polygonum compactum.—Chequers. Cannabis sativus; Hemp.—F. R. Leycesteria formosa.—Moan-raker. 1, Cypridium tonsum; 2, Coelogyne speciosa.—Muirtown. 1, Polypodium vulgare; 2, Blechnum spicant.—R. P. B. 1, Malilotus officinalis; 2, Ballota nigra.—A. J. J. 1, Helianthus multiflorus maximum; 2, Pyrethrum uliginosum; 3, Aster acris; 4, Aster Amellus Riverslea; 5, Aster diffusus horizontalis; 6, A. Novae-Angliae roseus; 7, Helianthus decapetalus.

POTATOES DISEASED: N. L. Y. The tubers are attacked by the wart disease. It should be notified to the Board of Agriculture, who will send you remedial measures.

ROSE AND WALLFLOWERS DISEASED: T. and S. Eelworm is present in both cases. In the case of the Wallflowers, dress the soil with gaslime; and for the Roses water their roots at intervals with a solution of sulphate of potash.

Communications Received.—Clibrans.—H. D.—E. F.—T. H.—B. H.—L. C.—T. W.—A. C.—P.—A. J. J.—A. J. L.—W. W.—T. R.—B. Ontario.—G. M.—T. J.—A. C. Cheshire.—B. P.—Subscriber.—C. P. and Co.—W. D. and Sons, Ltd.—J. B. C.—G. S. B.—T. L.—G. F.—R. F.—E. J. J.—Salop.—W. F. and Co.—H. T. W.—A. P.—E. J. R.—G. M. and Sons.—F. W.—Kersey.—F. N.—P. L. G.—R. P. (Thanks for 2s. for R.G.O.F. box.—Eds.).—J. H.—W. E.—H. R.—D. H.—B. H.—E. S.—J. M.—A. T. G.—L. C.—F. A. E.—H. W.—W. C.—B. H.—A. O.—A. D.—W. M.—B. Java.—C. C. Worcester.—Mrs. B.—T. H. C.—E. L.—E. J.—T. J. J.—W. H. A.

THE

Gardeners' Chronicle

No. 1502.—SATURDAY, OCTOBER 9, 1915.

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PRACTICAL TREE REPAIR.*

ALTHOUGH "tree surgery" has been practised in this country for two hundred, and almost certainly many more years, it has only lately been carried out on scientific principles. The early methods were rough and ready, and so far as the treatment of decay was concerned, aimed more at hiding it from view than at arresting its progress. As a rule it was only fruit trees and those which had some historic associations that received even this attention. Little or no care was paid to a tree on account of its ornamental value. Perhaps the first thoughtful practitioner was William Forsyth, who for many years was the royal gardener at Kensington. He advocated, some time at the close of the eighteenth century, filling tree wounds with a mixture of cow-dung, lime and wood-ashes, which mixture he regarded as an infallible remedy; "holes in trees may be brought to such a degree of soundness that no one can know the new wood from the old." Then, as now, the advocacy of a new treatment brought the inevitable acrimonious contentions, and he was regarded by some as a crank. But Forsyth's filling, applied to small holes, might conceivably produce beneficial results. In the case of a comparatively young and vigorous tree such a filling would encourage the free growth of the cambium layer, which, in due course, would callus over the wound and be, externally, a complete success. But the internal decay might continue just the same.

As with dentistry, so with tree doctor-

ing, the object of the skilled practitioner is first to remove decay, then treat the interior of the cavity with an antiseptic, and, finally, to plug it with a filling which will be water-tight and sufficiently strong to withstand any strain which is likely to be experienced, although most of us who practise "tree dentistry" like to go further and assist Nature to cover the ravages of time or accident, and incidentally to strengthen the subject of our attentions.

Fine ancestral trees have so long been one of the features of our English landscape that I am afraid it has become a case of, perhaps, not "familiarity breeds contempt," but rather indifference, and many owners of estates are inclined to look upon the loss of a one-time splendid tree as inevitable, and to allow Nature to take her course, whereas timely attention would add many years to the life and beauty of the tree. Fortunately for the charm of many parks and grounds some owners now look upon their possessions as a trust for future generations, and have expert advice for their trees. But this spirit of preservation is more common in the United States of America, where the irreplaceable value of existing trees is much more appreciated. Fully realising that it is given to only a very few to see a tree grow up into maturity, the wealthy Americans and local governing bodies recognise that the preservation of well-placed trees is worth the cost such work entails. This spirit has resulted in the rise of a school of arboriculturists who know trees, their possibilities, diseases and ailments, and are equipped, scientifically and practically, to deal with them.

A textbook became a necessity, and this new ground has been broken by Mr. Elbert Peets, a former student in the School of Landscape Architecture at Harvard University. The book is a "pioneer in its field," and deserving of high praise. To be able successfully to treat a wound or cavity in a tree it is essential to know the cause of the trouble, and for this reason, besides giving full instructions of the various methods and discussing different materials it is advisable to use, Mr. Peets devotes chapters to "Boring Insects and Their Control" and "Rot-Fungi and Their Work," as well as "The Tree's Structure and Manner of Growth." A knowledge of the subjects dealt with in this last chapter is particularly necessary, otherwise in endeavouring to strengthen a tree the ignorant workman is quite likely to impose an additional strain on an already weakened trunk. In the words of the author "an understanding of these basic principles (of the tree's structure and manner of growth) is just as necessary to the man who would repair trees as a thorough knowledge of human anatomy and physiology is necessary to a physician or a surgeon. All three do their work by virtue of certain natural laws, which they must know well before they can effectively use them."

Recognising that the practice of "Tree Repair" is in its infancy, Mr. Peets does not dogmatise, but as a rule wisely states both sides and leaves the reader to form

an opinion as to the relative values of the different opinions that are held and the various methods that are employed. In discussing the practice, which appears to be common in America, of bracing the trunk of the tree under treatment, he says that he is of the opinion that the value of bracing is problematical, with which the present writer is in entire agreement. But the question of bracing the limbs cannot be disposed of so readily. When it is wished to retain a branch that has become dangerous, or in the cases of a split fork or a decaying crotch, bracing is generally most advisable, as, even when decay has set in, "bracing may put off for many years the inevitable result of the destruction of the tree's framework." Decay spreads slowly, even though surely, but if the practitioner is in doubt as to the advisability of filling or of the kind of filling to use no great harm is done by delaying the work for a season, but bracing is an entirely different matter; if it is needed, do it at once, for the next storm may wreck the tree.

As in this country, the selection of a perfect material for filling cavities is still a matter of experiment in America, though the author says that asphalt is superseding concrete. Each individual tree has, however, to be treated on its merits, and the perfect general filling, suited for all trees and every kind of cavity or wound, has yet to be discovered. The American practice places a great importance on the preservation of the cambium layers adjacent to the wound, consequently the face of the filling seems to be nearly always left smooth, so as to present no obstacle to the spread of the callus, which is expected ultimately to spread over the filling. This, as a general practice, is, in the present writer's opinion, a mistake. In the case of small cavities and wounds in vigorous trees the cambium may be encouraged in a few years to cover all traces of damage or decay. But, in this country, the "tree doctor" is rarely called in for these; he has to exercise his skill and art chiefly on old trees, which nearly always have such large cavities that long before the cambium could cover one half of the cavity-filling the owner and the doctor would "have gone the way of all flesh," even if the tree remained. So I prefer to leave the last layer of filling rough, and by exercising a little art fashion it in imitation of the bark fissures of the tree.

The many illustrations, from photographs and line drawings, tell their story well, and Mr. Peets has treated of his subject with great lucidity. There is, however, not a little repetition, and the book lacks an index. Without the latter it loses much of the great value it would possess as a work of reference, for it contains many interesting facts and ingenious suggestions which in its present state cannot easily be found. For example, the effects of lightning on trees are dealt with in the chapter on the "Treatment of Wounds." But despite these faults, the book should be read by all who are interested in trees and their well-being. *A. C. Bartlett.*

* *Practical Tree Repair*. By Elbert Peets. (New York: McBride, Nast and Co. London: *The Field and Queen Office*, 1915.) Price 7s. 6d.

THE FERNERY.

DIVERSE VARIATION IN SPORES OF THE SAME FERN.

THE following instance of diverse variation in one and the same Fern (*Polystichum aculeatum* var. *pulcherrimum*) is so remarkable and so well attested that it certainly merits a special record in connection with varietal phenomena in plant life. In the year 1876 a plant of *Polystichum aculeatum* was found by a farm labourer (Beavis) in Dorsetshire, and it differed so markedly from the ordinary form that the finder took it to Dr. Wills, who had a large collection, and who recognised it at once as a decided acquisition and on account of its beauty named it "*pulcherrimum*." Under his care it thrived, and in time produced a number of lateral offsets, by means of which it eventually found its way into all collections of note. Of spores, however, it appeared to be perfectly barren, and hence all the plants distributed were practically parts of the original find. In 1903, however, a division given by the writer to Mr. C. B. Green, of Acton, was found to bear spores in sporangia, which, being either solitary or in twos or threes, were practically only discoverable by a lens or a very keen eye, no obvious sori existing. Of this advantage was taken, and sowings were made by Mr. Green and myself with the object of obtaining a crop of *pulcherrimum* on more liberal lines than mere divisions permitted. Both sowings were successful, and about a hundred plants resulted. My sporplings happened to be somewhat more rapid in development, and so soon as the secondary fronds appeared I noticed that some 30 per cent. were very much slenderer in make than the rest, a character which increased with development even in the open when they were planted out, and on examining those of Mr. Green it was seen that about the same proportion appeared among them also.

The eventual result was that an entirely new strain of peculiarly long and slender pinnuled plants resulted, which were named "*gracillimum*," while one plant raised by Mr. Green, while retaining this slender character, was divided so repeatedly that it was named "*plumosum*," resembling, as it did, the plumose section of *P. angulare*. The extent of the variation of the "*gracillimums*" may be judged by the fact that the parental half-inch pinnules were lengthened into long linear ones of over 2 inches, utterly transforming the appearance of the plants (cf. figs. 75, 76, 77). It is worthy of note that a large proportion of the crop of plants was true to the parental or *pulcherrimum* type, only a small percentage displaying reverted characters, and those much nearer to *P. angulare* than to *P. aculeatum*, a fact which induced the belief that the original sport is a hybrid between the two. The discovery of spores naturally led to a closer search in subsequent seasons, and the result shows that in all probability the presumed sterility was simply due to oversight, since more have appeared each season, so that the writer has raised another crop with practically the same percentage of like results, both as regards the production of more "*gracillimums*" and *pulcherrimums*, plus a few reversions. So far, however, this record only covers a case of wide variation on similar lines, and the production of what we may class as one new strain, characterised by greater tenuity and extent of division. We will now consider the very different results of another sowing recently effected of spores from practically the same plant, the parent being a division of the original Dorset find and identical with it in appearance. About three years ago Mr. J. Edwards, of Manchester, induced by the published results aforesaid, sought for and

found some spores on his plants. These were evidenced as usual by isolated or nearly isolated sporangia appearing as minute black dots near the margin of the pinnules, no obvious sori existing. On two occasions in successive years he found spores and sowed them, with the extraordinary results which we cannot do better than report in his own words, and illustrate by the photograph (see fig. 76) of a frond which is representative of not one but all of the small batch of new plants he acquired by the two sowings.

This report runs as follows:—"I exhibit a series of fronds of plants raised by me from *P. aculeatum pulcherrimum*, the parent of the now renowned strains of *P. ac. pulch. gracillimum* Druery and *P. ac. p. plumosum* Green. These fronds, it will be seen, differ widely from both of these types, being very dense and foliose instead of lax and slender, and the remarkable feature of these exhibits is that only this form appeared in my batch of youngsters, raised, be it remembered, from a division of one

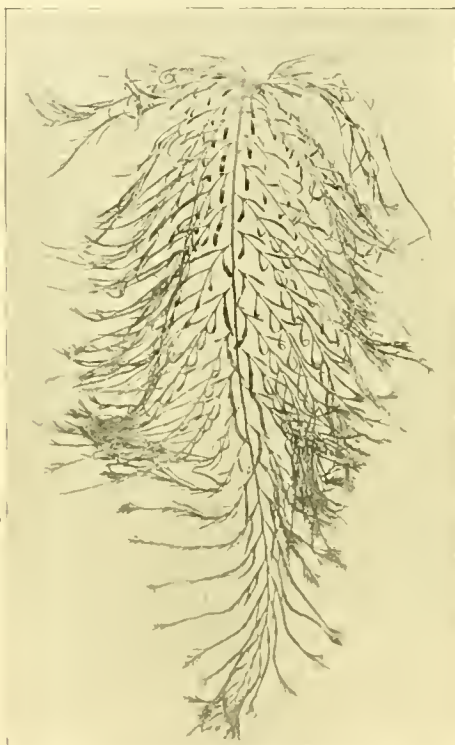


FIG. 75.—*POLYSTICHUM ACULEATUM PULCHERRIMUM* VAR. *GRACILLIMUM*.

and the same plant, *P. ac. pulcherrimum*, so that the three strains have arisen from the same identical parent. Mr. Druery and Mr. Green, the joint raisers of the two first sections, had identical results, viz., about 30 per cent. of '*gracillimum*,' and 1 '*plumosum*,' the rest, with very few exceptions, being true *pulcherrimums*, and these few exceptions reversions more or less to the normal, but on angular lines rather than *aculeatum*. The first batch raised consisted of six plants only—three of the new foliose type, the other three approaching the normal on angular lines, thus agreeing with the exceptions noted by Mr. Druery and Mr. Green. The parental '*pulcherrimum*' type did not appear at all. The second sowing yielded about thirty plants, of which eight or nine are of the new foliose type; there are no parental forms, and the rest are reversions on the lines indicated."

The net result is, as will be seen, peculiarly different from the original ones, since, while neither "*pulcherrimum*" itself nor a single

plant of the "*gracillimum*" section appeared, those which did exhibit a difference were not only of another type altogether, but varied in an entirely opposite direction, while the percentage of reversions was much greater. Why, therefore, the spores on Mr. Edwards' division (pinnules of which he exhibited to show that the spores were borne on isolated sporangia in precisely the same way as with the previous sowings) should produce a quite different crop, containing none of the other types, forms an enigma for the teratologist, and is certainly worthy of record. Nor is it impossible that the fertility of variation exhibited by this *Polystichum* has even yet been exhausted. Chas. T. Druery, F.M.H.

ORCHID NOTES AND CLEANINGS.

LAELIA HARPOPHYLLA.

THIS very showy, slender species is now seldom seen in such good condition as in the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), where the plants are grown in comparatively small pots. Four specimens, arranged with other pretty Orchids and bearing between them sixty-eight spikes of deep orange-red flowers, make a fine show at Rosslyn.

The species was known in gardens about 1865 as an extremely rare plant, and shortly after this date it seems to have been lost until more recently good importations of it were made. But now again it appears to be getting scarce. *Laelia harpophylla* was described by Reichenbach and remarked on in *Gard. Chron.*, April 19, 1873, p. 542, as "*Hybrid inter Laeliam cinnabarinam et Brassavolam?*" a suggestion which the importation of it in quantity and with little variation in the flowers conclusively refutes.

CATTLEYA HOPKINSII.

A BOUQUET-LIKE inflorescence of fourteen flowers of this Orchid is sent us by Mr. H. Haddon, gardener to J. J. Neale, Esq., Penarth. The variety was originally raised by Mr. Francis Wellesley by crossing *Cattleya Bowringiana* and *C. granulosa*, and although it will never be a first-class plant it is very attractive. Each flower is four inches across, with light rosy lilac-coloured sepals and petals, the lip being white in the lower half and streaked with purple inside the side lobes, which have the tips pointed and slightly reflexed in the manner characteristic of most *C. granulosa* crosses. The front lobe of the lip is broad and tinged, and veined with rose-purple, the principal veins being raised and bearing interesting evidence of the purple papulae in the lip of *C. granulosa*.

BOLLEA COELESTIS.

FLOWERS of this rare and beautiful violet-blue Orchid are sent by Mr. Fred. J. Thorne, from a specimen in Sunningdale Park Gardens, which has been in the Orchid house there for about twenty years. This is probably a record for the species or any other of the non-pseudo-bulbous section of *Zygopetalum* to which it belongs, for all have a reputation for vanishing in a few years. The flowers are solitary, on stems eight inches long, each four inches across, and wax-like in texture. The colour is violet-blue, with light tips to the segments, and there is a thick grooved yellow crest extending over the greater part of the basal portion of the lip. There never has been a general collection of Orchids at Sunningdale Park, but Mr. Thorne has had great success with certain rare and difficult species, such as *Diaerium bicornutum*, *Dendrobium spectabile*, and the leafy section of *Zygopetalum* allied to, which he grows in a warm, moist, shady part of the Orchid house, watering them carefully at all seasons, and liberally when making growth.

THE MARKET FRUIT GARDEN.

AFTER the heavy rainfall of the first day of September, drought, broken by only very slight showers, prevailed until the 24th, when about a quarter of an inch fell. This was followed by a fall of over one inch in the afternoon and night of the 27th, bringing the quantity for the month up to the respectable total of 2.47in. However, the ground had been dry and hard during the greater part of September, and hoeing in the orchards was difficult, slow and costly. The weather suited the gathering of Plums and mid-season Apples, but was not favourable to the swelling of the latter fruit, for which the wet weather of the end of the month came too late.

WHOLESALE DROPPING OF APPLES.

The fruit of many varieties of Apples ripened prematurely, and dropped profusely before the proper time for picking it, although September was remarkably free from strong winds up to the night of the 23th, when in unprotected orchards a gale regularly littered the ground with fruit. This may be attributed mainly to the drought, involving an insufficient flow of sap from the roots in the dry soil, but the unhealthy condition of the foliage caused by inclement weather in the spring and a bad aphid infestation must be regarded as a contributory cause of the misfortune. The varieties which suffered most from these unfortunate circumstances, including Worcester Pearmain, James Grieve, and Lane's Prince Albert, were conspicuous for the wholesale dropping of their fruit. The last, a feeble grower at the best, was quite unable to withstand the adverse influences of the season, and by the beginning of the last week of the month about half its thick crop of small Apples strewed the ground. Blenheim Pippin, which usually holds its fruit well, also littered the ground at the same time, retaining, however, a full crop of Apples mostly below the proper size. Allington Pippin held its fruit well, having recovered to a marvellous extent from the severe check the trees received from the adverse conditions named above, and Cox's Orange Pippin dropped no more than usual, which may be said also of Bramley's Seedling and some other late varieties. Early Apples are not mentioned, as they invariably drop profusely.

DISTORTED APPLES.

Never before have I seen so many Apples distorted in shape as there are this season. Lord Grosvenor furnished numerous specimens, but Lord Derby is far worse in this connection. The distortion resembles that of Pears spoilt by the midge, though there is no decay in the case of Apples. In each fruit affected there is at least one deep depression, in the centre of which there is usually a russeted spot or line, which is seen as a tuft through a magnifying lens. The depression has caused a twist in the fruit. The deformity resembles the result of an amateur's attempt to mend a hole in a cloth garment, the surrounding fabric being drawn in by the sewing. Probably the cause of the deformity was the biting of some insect when the Apple was quite small; but information as to what particular insect may be suspected has been sought in vain. Apparently some species of fungus has developed in the punctured spots. Truly we fruit-growers are in the midst of mysteries which we attempt in vain to solve.

SILVERLEAF ON APPLE GRAFTS.

In one orchard in which two rows of Duchesses of Oldenburg Apple trees were topped and grafted with Norfolk Beauty last spring, there is more or less silverleaf on fully one-third of the trees, some young branches being affected and others not. Or rather it should be said that this was the case, for the silvered parts have been cut off. Now, I have never had silverleaf on any of my

Apple trees before, and it would be interesting to learn whether these grafts can have been infected from silvered Victoria Plums growing at a small distance from them. Against this surmise there is the fact that no silverleaf Plum has been allowed to become badly diseased enough to develop the fruit of *Stereum purpureum*. Moreover, in another orchard, in which only Apples and Currants are growing, a few grafts of Bramley's Seedling on Irish Peach topped also showed silverleaf. These cases are at least two hundred yards from any silvered Plum, and there is no case of silverleaf on the other Apples in the orchard. There is nothing uncommon in the development of the disease on newly grafted trees; but probably it is not often that the attack is as

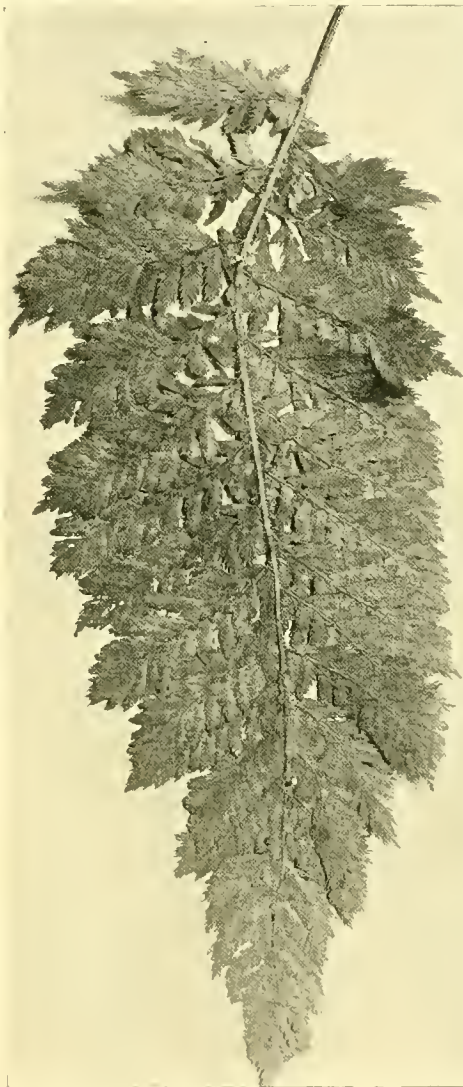


FIG. 76.—*POLYSTICHUM ACULEATUM PULCHERRIMUM*
VAR. *FOLIOSUM*.
(See p. 226.)

extensive as it is in the orchard first referred to. My own impression is that it is due to the imperfect nutrition of the silvered shoots, although they have grown out well for a dry season, because I notice that in several cases the infected grafts have only partially "taken," so that companion shoots which have perfectly united to the stocks may rob the infected ones of nourishment to some extent. But why should silverleaf attack grafts on topped trees more than grafts on young stocks, thousands of which have been grown here without a single example of the malady being seen? Another perplexing mystery, on which the experience of readers may throw light.

INFLUENCE OF STOCK ON FRUIT.

In several varieties of Apples, notice has been taken in many seasons of differences in the appearance of fruit produced on trees grafted on the Paradise and free or Crab stocks respectively. In most cases the issue in relation to stocks is not clear, because the products are those of different orchards, so that the differences referred to may possibly be due to differences of soil. Only in the orchard first planted were trees on the Paradise used, as it was concluded that growth from that stock was not, at least for several varieties, sufficiently vigorous on my soil. Still, the differences in the fruit of three varieties grown in one orchard on the Paradise and on the free or Crab stock in another may be mentioned for what they are worth. The fruit of Cox's Orange Pippin, Beauty of Bath, and Worcester Pearmain alike on the Paradise is more globular and of a darker tint than that on trees raised on the free or Crab stock. The difference in colour is particularly noticeable in Cox's Orange Pippin, the coloured sides of which are of a brownish or bronzed red, and the rest of the Apples a dusky green on trees grafted on the Paradise, while the colours of the fruits on the other stocks are a brighter red and yellow. There is also more striping in the latter than in the former, and less russetting. In one orchard, however, trees of Cox's Orange Pippin on three stocks were deliberately planted side by side, one row each of trees on the Crab, the free, and the Doucin, the main object being to notice difference in vigour of growth. From the first it was noticed that the only general difference in growth was greater irregularity in the sizes of the trees on the free stock than in those of the other stocks. To my surprise the trees on the Doucin stock grew as freely as those on the Crab, and at present there is no general difference between them. In the free stock row there are some of the biggest and some of the smallest trees. As to fruit, previous to the present season, the ninth from the planting, no clear difference in yield, size, shape, or colour had been noticed, and the only differences this year were that the trees on the crab bore the greatest number of Apples, while those on the Doucin produced the largest fruit. Each of the stocks was excellent for its kind, and was grown and grafted in my nursery patch.

TWO PROFITABLE APPLES.

For regular and profuse productiveness no culinary Apple grown by me quite equals Royal Jubilee or Lord Derby. The former may be placed first in this connection. The fruit does not command the top price in its marketing season; but the tremendous yield makes up for this defect. It is large, shapely, and remarkably free from disfigurements of any kind. Moreover, it is an excellent cooker, and probably the fact that it is less generally known than some other mid-season Apples accounts for its comparatively low price. Lord Derby sells a little better, and the malformation of much of the fruit this season, referred to in a preceding paragraph, is unusual.

CHARLES ROSS.

The best of my dessert Apple crops this season has been that of Charles Ross, recently gathered. The branches had to be propped up to a great extent, as a full crop of the large fruit is likely to break them. The chief fault of this variety is that it is too large for dessert; but for beauty it is unequalled by any other variety known to me, and for flavour it is unbeaten by any commonly grown Apple in season between Beauty of Bath and Cox's Orange Pippin. It sells well, partly in consequence of its ornamental appearance in a shop window or on a dinner table. Unfortunately, it is subject to bitter pit or fruit spot, two maladies difficult to distinguish offhand, though the former is a physiological defect, while the latter is of fungous origin, apparently not much noticed, if at all, by mycologists in this country. *A Southern Grower.*

TREES AND SHRUBS.

FORMING NEW PLANTATIONS.

(Continued from page 211.)

Pitting and Planting.—Having dealt with the various preliminaries connected with the formation of a plantation, the actual work of preparing the ground and inserting the plants will now be considered. Two methods of planting are usually adopted—pitting and “notching”—each having its warm supporters, and largely dependent on the site of the plantation and quality of soil.

The advantages of pitting over any other method of planting cannot, however, be questioned, and this is particularly the case with ground that has hitherto been uncultivated. Compared with notch-planting, this system is far more expensive, but the future benefits to the plantation where pitting has been carried out are admitted by all practical arboriculturists. It must not, however, be assumed that though pitting is preferable, the notch system is to be abandoned, for there are many rocky situations and moorlands where the latter would be the only practice feasible, and plants so inserted have often succeeded admirably.

The pits are made from 15 inches to 18 inches in diameter, if circular, or 15 inches if square, and the sides and bottom of each loosened by a pick, but in all cases the holes should be of a size sufficient to admit of all the roots being spread out to their full extent and also to allow of a margin of loose soil to exist between the root extremities and edge of the pit.

Usually the pits are marked off by one man and dug out by several. In light, loose soil or such as has recently been under cultivation the pits need not be so large. When opening the pits the grassy surface, if such is present, should first be removed and placed on one side, the soil being heaped on the other, for ease and convenience in planting. Before planting, the surface turf is placed in the bottom of the pit, and after being broken with a spade is covered with a few inches of fine soil, so as to make the pit of the required depth. The plants are then inserted, and as a further supply of soil is being added, they are gently moved to and fro and placed in an erect position before the operation of planting is completed.

The soil must be trodden firm amongst the roots, and when planted the young tree may stand about an inch deeper in the soil than when in the nursery border. The distance apart at which young trees may be planted will depend greatly on the situation and size of plants, but from 3 feet to 4 feet is a good average. In all cases the pits should be opened some time before planting is engaged in; indeed, where the soil is stiff or otherwise unfavourable a good practice is to carry out the work in autumn and plant the following spring, as by so doing the full benefit of a winter's frost in sweetening and ameliorating the soil is ensured. The cost of pitting varies greatly, according to the quality of soil and wages paid in the district, but from 1s. 8d. to 2s. 6d. per 100 is about the average.

During favourable weather tree planting may be most successfully carried out from about the beginning of October to the end of February, but, generally speaking, autumn planting is to be recommended. There are, however, several exceptions, such as on exposed or maritime situations, on water-logged soil and peat bog, when spring planting is preferable; but in all other cases tree planting in the British Isles should be commenced soon after the fall of the leaf, which usually takes place in the second or third week of October, according to the season.

Notch planting is certainly the most expeditious and by far the cheapest method of inserting young trees under 15 inches in height. It is carried out by simply cutting the sod or surface by two strokes of the spade, and to a depth of about 5 inches, thus $\perp$ or L . With



FIG. 77.—FROND AND PLANT OF *POLYSTICHUM ACULEATUM GRACILLIMUM DRUERYI*, WITH PINNAE OF PARENTAL FORM.

(See p. 226.)

the first stroke the spade is inserted in the ground in an almost perpendicular manner; it is then withdrawn and inserted at right angles to the first notch and close to it, and by pressing down the handle of the spade the slit is opened up and the plant inserted from the blade of the spade towards the end of the opening. The spade is then carefully withdrawn, and the turf at the point where the notch or slit was made firmly trodden down, so that the opening is securely closed. This latter is most important, as if air is admitted by way of the slit the roots become dry and the plant dies in consequence. Two persons, a man and a boy, are required to carry out notch planting expeditiously, the man opening the slit and the boy inserting the plant. As before said, notch planting is rarely practised, unless on bare and hilly ground, where large tracts of upland in Scotland have been successfully planted in such a way.

The planting-iron is sometimes used in the formation of young plantations, particularly in rocky upland situations. It is 17 inches long, weighs 3 lbs., and can conveniently be used with one hand, but is only admissible where the ground is rough and the plants are small. Holding the iron slackly, the planter strikes it into the soil with sufficient force to drive the heart-pointed blade in about 4 inches or 5 inches. Then, with a downward and slightly twisted pressure to the right the left corner of the turf is sufficiently opened up for the insertion of the roots of the plant. The iron is then withdrawn, and the up-turned turf made firm by treading. Both notch planting and planting with the iron cost about 30s. per acre. *A. D. Webster.*

(To be continued.)

FRENCH NOTES.

L'ABBE THIVOLET.

On March 25, 1915, the venerable Abbé Thivolet died at Paray-le-Monial (Saône-et-Loire) at the advanced age of 91. Monsieur Thivolet deserves the gratitude of horticulturists for his successful efforts in the improvement of fruits, and it is to him that we owe the production of the large, autumn-fruiting Strawberry. An account of this discovery was given by M. Henri de Vilmorin in a lecture before the R.H.S. in 1898 (see *R.H.S. Journal*, vol. 22, part III.). Previous to the work of M. l'Abbé Thivolet several varieties of large-fruited imperfectly "remontantes" had been raised; for example, L'Inépuisable, which was brought into commerce by Mabillet, of Limoges, in 1871. L'Abbé Thivolet commenced his attack on the problem in 1880, and a few years later he obtained the Strawberry Roi Henri, which became the source of the perpetual varieties with large fruits cultivated at the present day. He claimed to have obtained this variety as a result of crossing a large-fruited form with the Alpine Strawberry, but this origin is doubtful, and is not accepted by M. Henri de Vilmorin, who points out that the cross, though it has often been made, has always failed to give results, and also that the tendency to continue fruiting is exhibited by most varieties with large fruits.

However, Mr. Etter, of Briceland, California (see *Journal of Heredity*, July, 1915), claims to have succeeded in crossing a large-fruited variety with the Alpine Strawberry. One of the characteristics of the latter is that the fruit detaches itself readily from the sepals, and this character, according to Mr. Etter, is transmitted to the descendants of the cross. But he makes no mention of the "remontant" quality. Hence the origin of the large-fruited autumn-bearing Strawberry is still in doubt, and it is much to be desired that further experiments should be made by crossing large-fruited Strawberries with the Alpine or Fraisier des quatre saisons. After St. Joseph, the first variety of great value obtained by l'Abbé Thivolet was Saint Antoine de Padone,

raised from a cross between St. Joseph and Royal Sovereign. One of the most recent of the many kinds having one or the other of these autumn-fruiting kinds for parent is St. Fiacre (see fig. 78), obtained by MM. Vilmorin from St. Antoine de Padoue and Louis Gauthier. St. Fiacre, according to Mr. A. E. Bunyard (*Journal R.H.S.*, April, 1914, p. 549), probably represents the highest achievement in this section.

Little is known of the life of l'Abbé Thivolet. For 42 years he was curé of Chenoves, a little parish of 425 inhabitants, in the department of Saône-et-Loire, in the centre of France, not far from Lyons. He has left among his parishioners the memory of a kind and good man. *J. Meunissier.*

NOTICES OF BOOKS.

FUNGUS DISEASES.*

ALTHOUGH the title of this little book is more ambitious than is warranted by its contents, the book itself forms an excellent introduction to the gardener who is interested in the study of fungous diseases.

The parasitic fungi described by Mr. Milburn include those which attack cereals, leguminous crops, Potatos, cruciferous plants, and the Mangel and the Beet.

It is therefore evident that many fungi which seriously trouble the gardener and small cultivator are not included. For instance, the book does not deal with the fungous pests which occur on fruit trees and bushes, nor those which attack such crops as Celery, Lettuce, Onion and the like.

We think, therefore, that it would have been well if the author had chosen some title which would have been less encouragement to the reader to expect more comprehensive information on the large subject of fungous diseases of garden crops.

Save for this and certain minor criticisms, we can unhesitatingly recommend Mr. Milburn's book to our readers. The description of the pests and of the modes of combating them are accurately and succinctly given, and the writer has a sound and first-hand knowledge of his subject. Here and there the information might be augmented with advantage. For instance, at a time when wart disease is occupying so much attention it is scarcely sufficient to mention only one disease-resisting variety. With respect to dry rot of Potatos, the writer states that "the damage is small compared to that caused by some of the other fungi." Although we cannot dispute this statement in the form in which it is made, yet the inference to be drawn from it, that the disease is not a very serious one, is by no means correct, for as Potato "seedsmen" know, and as has been proved experimentally, the disease is responsible for considerable losses in the store and also for not a little loss in the crop reared from infected "seed."

The writer gives some interesting statistics with respect to the probable loss caused by late blight of Potatos (*Phytophthora infestans*), computing that in a bad year, when the disease is rampant, the loss in this country may be so much as £3,744,061. Now we should be the last to deprecate the general spraying of the Potato crop with Bordeaux mixture, yet we are bound to point out, in justice to the large number of intelligent growers who do not spray, that the writer has omitted from his estimate the cost of spraying—a by no means inconsiderable item. Moreover, to get at a fairly sound estimate it would be necessary to calculate the cost of spraying, not only in a bad year, when the Bordeaux mixture would result in considerable

saving, but also in the good years, when spraying would be a less remunerative proposition.

METHODS IN PLANT HISTOLOGY.*

THE third edition of Professor Chamberlain's well-proved work on Plant Histology is practically a new book. The plan is that of previous editions, but the directions have become, with the rapid advance of technique, more precise, and hence more valuable, particularly for the beginner. The work has already a wide vogue in universities, but it is not known so well as it should be among the large though scattered class of amateur students of microscopy. The layman who visits modern botanical laboratories equipped with microtomes and all the ancillary apparatus for section-cutting is apt to be as discouraged as amazed at the apparent complexity of the modern methods of investigating the minute structure of plants. But with a guide to this magic, such as is produced by Prof. Chamberlain's book, the working of it is seen after all to be a simple affair. Indeed, some of the best sections we have ever seen were cut, stained, and mounted by an amateur, Mr. Charlesworth, and we well remember our admiring surprise when he showed us the microscopic details of the fungi which live symbiotically with the roots of Orchids. Prof. Chamberlain's book is planned on simple lines. In Part I. chapters are devoted to apparatus, reagents, methods of staining and fixing, mounting, section-cutting by the paraffin and other methods. In Part II. the chapters deal successively with the several classes of plants, from the lowest to the highest.

Anyone who has the leisure and inclination to engage upon the fascinating study of plant histology cannot do better than to buy and study this book.

FOREIGN CORRESPONDENCE.

NOTES FROM JAVA.

TROPICAL PLANTS IN THE OPEN.—Before I left Holland I made some experiments in growing tropical and sub-tropical plants in the open. It is a well-known fact that the tropical *Broussonetia papyrifera* (indigenous to Java) grows luxuriantly in Holland and elsewhere in Europe; but it is remarkable that *Zingiber officinale* has survived a winter at Middelburg under my care, notwithstanding a minimum temperature of 18°, or 14° of frost. The following winter there were 18° of frost, to which the plant succumbed. *Vitis indica*, the seeds of which I obtained from Saigon some years ago, wintered in the open for five years; the plant was only 4 inches high and has stood a temperature of 14°. *Phygellus capensis*, an African plant, wintered in the open for ten years, but was killed in the severe winter of 1890-91. I shall be glad to hear of the experiences of other growers with these and similar plants.

HOT-HOUSES IN THE TROPICS.—Referring to my note on page 121, I may state that I have found the following note in the report of the Hawaii Agricultural Experiment Station for 1914 on page 34: "The solar heater which was originally installed in the propagation house proved satisfactory only during the afternoons of sunny days. A small gas heater and a water boiler were placed in the propagation house. A concrete pit has been constructed at one side of the house, inside of which have been installed a large gas heater, a thermostat, and a boiler."

This note clearly shows the necessity of artificial heating for seeds and cuttings even in the tropics. Nowhere is the temperature high enough for the germination of seeds (always, of course, not fresh), and for the rooting of cuttings, the latter means of propagation being strictly artificial. *M. Buysman, Lawang, East Java.*

* *Fungous Diseases of Farm and Garden Crops*. By Thomas Milburn, Ph.D. (Longmans, Green & Co., London, 1915.) 2s. net.

* *Methods in Plant Histology*. By Charles J. Chamberlain, Ph.D. Third revised edition. (The Cambridge University Press, Fetter Lane, London. Agents for University of Chicago Press.) Price 2.25 dollars net.

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINTHGOUGH, Hopetoun, South Queensferry, N.B.

MELONS.—As the fruits of the latest plants approach maturity, exercise care to prevent them cracking, which not infrequently occurs after a spell of dull weather. To prevent this, maintain a night temperature of 70°, and during the day keep the house rather warm and dry: at the same time, ventilate freely when the weather is favourable. Keep the soil moderately moist until the fruits change colour for ripening; to prevent the roots suffering from drought place a light mulch of manure from a spent Mushroom bed over the surface. In some cases it may be necessary to cut the shoot about half-way through slightly below the fruit, a procedure which is usually effective against Melons splitting. In order to prolong the supply a number of the fruits should be cut before they have parted from the stalk and placed in a cool, airy fruit-room, where they will remain in a sound condition for a long time. Plants that are swelling their fruits require very careful attention, chiefly in watering. It is necessary to maintain a genial, moist atmosphere, which at this season can usually be done by damping the paths mornings and afternoons. As the sun declines in power late Melons will probably flag during the hottest part of the day, and this can usually be prevented by shading the glass lightly and attending carefully to ventilating.

EARLY POT VINES.—The wood of Vines intended to be started towards the end of the present month should be well ripened at this stage, and may be shortened to a suitable length. The plants must, however, be fully exposed to sunshine until they are placed in the forcing house. Meantime the rods should be thoroughly scrubbed with a solution of soft-soap and sulphur as a preventive of insect attacks. Remove a little of the surface soil from the pots and top-dress the roots with good loam mixed with bone-meal, a quantity of newly-burned wood-ash, and a little Vine manure. Get the pit where they are intended to be grown in readiness, cleansing it thoroughly, lime-washing the walls and coating the hot-water pipes with thin black paint. From now until the Vines are housed the doors and ventilators of the pit should be kept wide open.

POT FRUIT.—Examine the drainage of trees that were repotted at the beginning of the season and attend to any that require top-dressing. Should there be no room in the pot for the top-dressing material, place zinc collars around the edges, for this is sometimes preferable to repotting. Prune any shoots that require shortening or removing, and then plunge the pots over their rims in a bed of ashes, in the order which they are intended to be forced, to avoid unnecessary disturbance later.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

WALL TREES.—All vacancies on walls should be made good with young, healthy trees. First remove the exhausted soil from the border and replace it with fresh, turfy loam of good quality. If the soil is of a clayey nature, very little, if any, manure is needed; but sandy or gravelly ground resting on a porous subsoil should be enriched by adding well-rotted manure. In planting fruit-trees in heavy, strong soils, it is advisable to make a slight mound so that the roots will be a little above the level of the surrounding ground, but in gravelly soils plant in a slight depression. Fruit-trees on poor, hungry soil require liberal treatment to induce them to make moderate growth, but as a rule the wood ripens satisfactorily, and there is generally a good crop,

though the fruit is not extra large. Every means should be employed to hasten the ripening of the wood of Peaches and Nectarines by the prompt removal of all superfluous growths. Some of the leaves on the early varieties will soon be falling, but do not hasten defoliation. Attend to the watering of the borders, especially that part nearest to the wall, as the roots are still growing actively, and a check would react injuriously on the buds, which are maturing their growth.

NUTS AND FILBERTS.—The nuts may be gathered and stored, for if allowed to become fully ripe on the trees, many will fall and be spoilt. It is a good plan to spread them on mats in an open or well-ventilated shed, so that they may become quite dry before being stored in bulk, otherwise they may heat and their appearance become spoiled for dessert purposes. The crops of both nuts and Filberts in this neighbourhood are not large, but the quality is good, and the kernels well matured.

RASPBERRIES.—The warm, sunny weather of late summer ripened the berries of autumn-fruiting Raspberries, which are above the average in quality. Make preparations for the planting of summer-fruiting varieties, especially where the soil is cold and of a retentive nature. Ample drainage is necessary to the successful cultivation of these fruits, and where the subsoil is heavy and retentive of moisture, it should be drained. Where the soil is of sufficient depth to practise trenching, the work should be done forthwith, and a liberal dressing of well-decayed stable manure or cow manure added. Most of the summer-fruiting varieties have made excellent canes this season; the old rods should be cut away at once if this has not been done already. New plantations of Raspberries may be made at once, but where the soil is naturally warm and well drained, the planting may be deferred for the present if other work is more urgent.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

PROMELEA.—There are three species in this interesting genus, *P. Rollissonii*, *P. stapelioides*, and *P. xanthina*, all of which are worthy of cultivation. The plants should be grown in shallow pans, and suspended near the roof-glass of the intermediate division, or at the cooler end of the Cattleya house. When in a thriving condition these Orchids produce plenty of bloom, especially *P. xanthina*. A week or so after the flowers are removed the work of repotting may be done. The usual compost should be employed, and after the plants are repotted very little water will be needed for three or four weeks. As growth and root-action increase, so may the water supply be greater until the pseudo-bulbs are completed. When the plants are at rest the soil should be kept just moist.

ONCIDIUM PAPILIO AND O. KRAMERIANUM.—These Oncidiums are in flower: healthy specimens may be permitted to produce from four to seven blooms, but it is advisable to remove the spikes from weak plants at an early stage. Both these Oncidiums are liable to exhaust themselves through over-flowering. They should be grown in a light position, either among Cattleyas or in a warm house. During their season of active growth plenty of water is needed, but the supply of moisture should be reduced gradually as the resting season approaches.

PAPHINIA CRISTATA.—This is a small plant producing a short, pendant scape, with one to three flowers. It should be grown in a shallow pan, filled one-half its depth with drainage material. The soil should consist of Osmunda-fibre, or peat, and Sphagnum-moss in equal parts. A plant or two should be grown for trial with a few broken Oak or Beech leaves added to the mixture. A position near the roof-glass of the warmest house should be chosen for this Orchid, and during bright weather rather heavy shading must be used. A moist atmosphere is essential, and careful watering is necessary at all times.

TEMPERATURES.—We have reached a time of the year when some slight modification may be made in the treatment of the plants. The

temperatures in the various houses should be approximately as follow, but the figures need not be strictly adhered to, as the grower must be guided, to a certain extent, by the weather, and a rise or fall of a few degrees will do no harm. The maximum reading should be reached about mid-day, and fluctuations of temperature must be guarded against, an easy matter now that the sun is less powerful:—

	Day.	Night.
East Indian or warm house	70°	65°
Cattleya House	65°	60°
Intermediate house	60°	55°
Odontoglossum or cool house	55°-60°	50°-55°
Seedling house (Cattleyas)	70°-75°	65°
Seedling house (Odontoglossums)	60°	65°

SHADING AND VENTILATING.—Let the plants have all the sunlight, therefore shading of every description must be dispensed with. Canvas blinds may be removed entirely, dried thoroughly and stored in a dry place for the winter. Wooden lath blinds may be allowed to remain in position on the houses, as they will prove useful during frosty weather. If they are drawn down on cold nights fire-heat will be economised, to the plants' benefit. Ventilation will need close attention, for cold draughts of air must not be permitted; at the same time, the ventilators—and particularly those of the cool houses—must never be closed for any considerable time. There will be less need now to promote atmospheric moisture by damping the bare spaces, for many plants have completed their season's growth, the weather is naturally moist and little fire-heat is required. The maximum temperature should be reached before much moisture is sprinkled about the house, and this work must never be done when the temperature is falling.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

BEGONIA GLOIRE DE LORRAINE.—The earliest batch of these Begonias may be allowed to flower. Let the plants have plenty of space, and grow them in cooler conditions, now that the flower-buds are expanding, as the plants and flowers will then remain in a better condition for a long period. Tie the flowering shoots as it becomes necessary, and give liberal supplies of weak stimulants to these and later batches of plants.

HELIOTROPICUM.—The garden Heliotrope is amongst the tenderest of soft-wooded plants used for summer bedding, therefore the plants should be lifted and brought indoors before frosts occur. A good stock of Heliotrope should be grown if a regular supply of highly scented flowers is required in winter. Old plants, if placed in pots of a suitable size, will yield more bloom than vigorous young plants. The best way of training the plants is as pyramids grown loosely, or standards with bushy heads. A temperature of 45° to 50° at night is suitable; in a warmer house the shoots would become drawn, whilst on the contrary, cooler conditions would result in weak shoots and little bloom. Feed the roots with weak manure water when they have filled the pots, for the soil soon becomes impoverished. If young plants struck last spring are selected instead of these old plants, they should be grown near the glass in a few degrees' higher temperature, as the more growth they make the more flowers will they produce.

CHRYSANTHEMUMS.—These plants will figure prominently in all kinds of floral decorations during the next three months. Pay strict attention to watering the roots, then the plants will flower over a long period, and this is especially necessary for specimens in small pots. The staking of bush plants needs constant attention to secure the branches from injury by winds or other causes. Continue to feed the plants liberally, as upon the state of the foliage depends their appearance when in bloom. Keep a keen watch for mildew, which, if not eradicated early, will be sure to cause trouble later when the plants are housed. Clear water only must be afforded to plants in flower and air must be admitted in accordance with the

weather conditions. Examine large-flowering varieties for damped florets and take care not to damage the rest of the flower when removing them. Use fire-heat sparingly for some time to come in bright weather; it must not be dispensed with altogether. Tie the growths thinly apart to expose every shoot to the sunshine and air, and remove all superfluous growths forming below the flower-buds. Place all plants that are showing colour in their flowers indoors. These early plants do much better in a cool house than out-of-doors, as the night dews spoil the florets, the injury showing at a later date when least expected.

IXORAS.—As these plants pass out of flower select strong, clean shoots as cuttings, which, if rooted quickly and grown on, will make good plants that will furnish two or three good trusses of flowers early next spring. By careful treatment these cuttings will make good specimens by next autumn. *Ixoras* should be grown in a minimum temperature of 65° to 70°, and at no season is warmth more necessary than the present, for in cool conditions the flowers will lack size and substance. Keep the roots in a uniform state of moisture and use liquid manure with caution.

THE CONSERVATORY.—The majority of the summer-blooming, soft-wooded plants are over, and opportunity is afforded of giving the house a thorough cleansing. One of the most important details in the management of a conservatory is thorough cleanliness, for neglect in this respect detracts very much from its appearance. Much may be done to afford new interest at this season, when the climbers are over, by introducing groups of either foliage or flowering plants.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

EVERGREEN TREES AND SHRUBS.—Evergreen trees and shrubs may be transplanted. A few days previous to lifting the roots, soak them with water, then the trees will lift with good balls of soil. Prepare the holes for replanting in advance, in order that there may be no delay once the roots are out of the soil. The size to make the holes must be governed by the ball of soil and roots; it should be sufficiently wide to permit of spreading the roots horizontally. When planted, the top of the ball of roots should be about 4 inches below the surface. Settle the soil by watering, and if necessary water the roots again after a few days. An occasional syringing of the top growth will be beneficial.

PAMPAS GRASS.—Pampas Grasses are throwing up their plumes, and their development will be assisted by soaking the roots with water. If the plumes are wanted for indoor decoration allow them to open before cutting them. *Arundo conspicua*, which resembles the Pampas Grass, is useful for its early blooming, the plumes remaining effective for many weeks.

LIFTING SPECIMEN PLANTS.—In this locality we rarely experience frosts severe enough to harm tender plants before the end of October. But in most gardens it is not safe to rely on this date, and specimen plants such as *Heliotropium*, *Lantana*, *Fuchsias*, *Cape Zonal* and *Ivy-leaved Pelargoniums* should be lifted forthwith, potted and placed under glass. Keep the house or pit moderately close for a few weeks and syringe the plants on fine days; later the house may be ventilated. It is not the usual custom of gardeners to retain old plants of *Calceolaria amplexicaulis*, but if a few of the best one-year-old plants are potted they will make good specimens for the beds next year. Such plants, associated with *Salvias*, *Pelargoniums* or *Ageratum*, produce a bold, graceful effect. Tender plants growing in tubs must also be placed in the glasshouses or where they will be safe from extreme cold.

SPRING BEDDING.—As soon as the summer bedding is over, the beds should be cleared and got ready for the spring-flowering plants. For most subjects the soil will need a liberal dressing of well-decayed manure, which should be forked or dug in the ground. Bulbs give a better effect when used in conjunction with other subjects than in beds by themselves. *Violas*,

Arabis, *Aubrietias*, *Myosotis* and *Polyanthuses* all provide good groundwork for Tulips. A simple but effective scheme is obtained by planting double Tulips *Murillo*, *Queen Emma*, and *Lord Beaconsfield*, either separately or collectively, over a carpet of *Myosotis*, and a good yellow Tulip is always satisfactory over a carpet of dark *Violas* or *Aubrietias*. A good strain of *Polyanthus* is most valuable for spring bedding, and, as the plants are easily grown, should play an important part in the scheme. A mixture of yellow and white varieties associated with *Myosotis* make pretty beds. Wallflowers are always popular flowers, but sturdily grown plants are necessary for success; the numerous varieties should be planted by themselves in beds edged with *Myosotis* or double *Arabis*. Daffodils should only be used for spring bedding if they cannot be planted in a more natural manner, as grass is much the best place for these popular spring-flowering bulbs. Plant during dry weather, as freshly-dug ground should not be trodden when wet.

HARDY CHRYSANTHEMUMS.—*Chrysanthemums* grown in beds to furnish cut blooms should, if possible, be protected from early frosts. Glazed lights fixed firmly over them offer the best protection, as the blooms will be kept dry, and consequently last in good condition for a long time. *Tiffany* or *Archangel* mats stretched over skeleton frames would probably be a sufficient protection against frost for some weeks to come. Plants not yet showing colour in the flower buds should be lifted and potted. Prepare for this by cutting around the roots some distance from the stem. Water the plants copiously afterwards, and syringe them daily; they may be lifted in about a week after cutting around the roots and placed indoors.

ANCHUSA.—To increase the stock of *Anchusas*, lift a few old plants and cut the thicker roots into lengths of about 5 inches. Place the portions of root in pots or boxes filled with sand and stand the boxes in a cold frame. By spring each piece of root will have formed a crown that will develop into a good plant. The root cuttings may be placed singly in small pots and grown on for planting in beds or borders.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

MUSHROOMS.—If beds were formed and the spawn inserted in August, the buttons will be showing through the surface. Very careful treatment is necessary to secure the best results. While mild weather lasts the temperature of the house may be regarded as safe at 60°, but when cold weather sets in the glass may be allowed to drop to 50° before fire-heat is used. Examine the beds, and if the soil is dry, water it with clear, soft water; but it must be remembered that frequent waterings are sometimes detrimental to the crop. A covering of clean straw placed over the beds will prevent evaporation of the soil moisture. Syringe the walls and path as it becomes necessary to promote atmospheric moisture. Collect and prepare the materials for successional beds, and do not place any great quantity of manure together at one time, as this would cause it to become sour.

GREEN HERBS.—If the Mint bed was cut over a month ago and the roots are still dormant, some of the plants may be lifted carefully and placed in gentle heat to furnish green leaves throughout the winter. A little bottom heat should also be provided by means of leaves and stable manure, which must be made firm and covered with a few inches of light soil. Place the roots on the hot-bed and cover them lightly with sifted soil. Water for the roots should be not colder than 75°. Do not allow the bed to become too hot by fermentation or the roots may be scalded. Tarragon may be treated in the same manner as Mint. Marjoram planted out in summer should be carefully lifted and potted into 6-inch pots. Grow this herb in a slightly-heated pit. Keep the structure close until root-action commences, but when the plants are established ventilate freely, for damping is the

greatest trouble with Marjoram in winter, and must be combated by a free circulation of air. A temperature of 45° to 50° is sufficient during winter. Basil requires a temperature of 60° and may be grown in pots or boxes filled with compost consisting of turfy loam and leaf-mould mixed with plenty of sand. Sorrel should be lifted and placed in a slightly-heated pit, with a view to producing a continual supply of green leaves in winter. Chervil may be raised from seed sown now in a cold pit within 15 inches of the roof-glass. In mild winters this herb needs no protection, but to make quite sure of a supply a small sowing should be made in a cold pit. Cover the seed lightly with fine soil and keep the pit closed until they have germinated, but afterwards ventilate freely.

PARSLEY.—Plants in cold pits should be fully exposed to the air until wintry weather sets in. Keep the soil between the plants free from weeds and stir it frequently with the Dutch hoe. Soot is an excellent stimulant for Parsley, but must be used in moderation. Remove decaying foliage from plants in the open garden; also overgrown leaves which are not required for immediate use.

ASPARAGUS BEDS.—As soon as the stems are sufficiently ripe they should be cut and the soil freed from weeds. Break the surface very lightly and apply a light dressing of decayed manure, which may be left uncovered throughout the winter. The alleys should be dug deeply, leaving the surface in a rough condition throughout the winter.

THE APIARY.

By CHLORIS.

FINAL WORK FOR THE SEASON.—All syrup feeding should be discontinued by the middle of October, when everything should be ready for the last manipulation, as the middle of October is too cold to open the hives. The number of frames should be reduced, only those being left which are covered with bees. Having done this, increase the combing spacing from 1½ inches from centre to centre to 1¾ inches, and to prevent an empty space at the back or side of the hive contract the space in the brood chamber by the division board. The bees will cluster at the top of the combs, where it is warmest. But when food on those combs becomes depleted the bees will have to descend into the colder parts of the hive to reach other stores unless some provision is made for them to do otherwise. Some beekeepers cut holes in the upper part of the comb to enable the bees to pass from comb to comb without the chance of becoming chilled, whilst others place sticks above the frames under the quilts for the same reason.

QUILTS.—The question of quilts is an important one, and often overlooked by beekeepers. The heat of the brood chamber must be conserved, and, in order to secure this, adequate non-conductive material should be placed on the top of the frames. The first coverings, or quilts as they are usually termed, must exactly cover the frames, so as to leave no gaping corners to create a draught and thus allow heat to escape. Pieces of carpet are generally used, but any other non-conductive material with a smooth surface will do equally well. Between the quilts place two or three sheets of neatly-folded brown-paper, and on top of the quilts a cushion thickly and loosely filled with any of the following:—Chaff, dry leaves, shavings or cork dust (such as that used for packing grapes). See that the cushion fits the whole space and that no openings are left at the corners.

ENTRANCES.—The entrance to the hives should be closed, so that only one bee can escape, and should snow fall arrange a piece of board so that the sunshine will not fall directly on the entrance, and thus entice the bees to take a flight when the atmosphere is very cold. The bees are so sensitive to cold that they become numbed at once, and will be found dead on the snow within a few yards of the hive.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 11—

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

TUESDAY, OCTOBER 12—

Roy. Hort. Soc. Com. meet. (Lecture at 3 p.m. on "The History of the Classification of the Apple," by Mr. E. A. Bunyard)

THURSDAY, OCTOBER 14—

B.G.A. (Central London Branch) meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 50.4.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, October 7 (10 a.m.): Bar. 30.2. Temp. 55°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY TO FRIDAY—

Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 10.30.

MONDAY AND WEDNESDAY—

Bulbs, Bay Trees, Perennials, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.

TUESDAY, WEDNESDAY AND THURSDAY—

Nursery Stock at Shortlands Nurseries, Guildford Road, Ash, Surrey, by order of Mr. H. Sleet, by Protheroe and Morris, at 12.

WEDNESDAY—

Trade sale of bulbs, at 1; Palms, Japanese trees, etc., at 4, by Protheroe and Morris, 67, 68, Cheapside.

THURSDAY—

39 Greenhouses, Piping, etc., at Belle Grove Nursery, Welling, Kent, by Protheroe and Morris, at 12.30.

FRIDAY—

Stove and Greenhouse Plants, Orchids, Horse, Carriages, etc., at Parkfield Gardens, Potters Bar, by Protheroe and Morris, at 12.30.

The Horticultural Industry.

It is inevitable that the war should have an adverse effect on the horticultural industry. Attention is fixed on other, momentous things; money normally devoted to gardens is expended on other and more pressing objects, and large numbers of those who support the industry in times of peace are fighting for their country. Furthermore, economy has been urged upon us, and although it would have more weight were the precept accompanied by example, we all recognise that economy must be practised.

Nevertheless, there are many and weighty reasons why those concerned for the present and future welfare of horticulture should do all that lies in their power to protect the horticultural industry from irreparable loss. In the first place, the general public, on which the industry depends, should recognise that horticulture is peculiarly a British industry, and that British firms can meet from their own resources all the requirements of our gardens. Hence, by spending money on seeds and plants the public may rest assured that that money is circulating within the country and is not helping to swell the total of our imports.

In the second place, it must not be forgotten that this industry is one which, in

some aspects, is of vital importance to the country. There can be no doubt but that the planting of every available plot of ground with vegetables is of the utmost importance. We urged it at the outbreak of war, and we urge it with no less emphasis now.

In the third place, all of us who share the sorrows and anxieties of these times realise with tragic vividness the truth of the aphorism that man does not live by bread alone. It is well that we, in such measure as we may, maintain the brightness of our gardens and continue to tend them so that they may solace ourselves and our neighbours. What solace is to be gained from the garden we all know, but never was it borne in on us so forcibly as when a few days ago a wounded New Zealander, fresh from Gallipoli and taken by a member to Wisley, exclaimed: "It was worth while going through it to come here." For these reasons we would urge upon our readers to reduce their garden expenditure as little as possible. In the best of circumstances, the horticultural traders must suffer heavy losses, but these losses will be reduced markedly if gardeners generally will approach the problem of economy from the point of view of compromise; recognising on the one hand that a reduction in expenditure may be necessary, and on the other, that a British industry deserves and needs their support.

We welcome, in this connection, the wise and moderate letter which the Council of the Royal Horticultural Society has addressed to its Fellows. After drawing attention to an earlier communication, in which it urged its Fellows to continue, so far as possible, to support the national industry of horticulture, the letter recognises how loyally Fellows of the Society have responded to the appeal, and records the gratitude of the nurserymen and seedsmen for the support which they have received. It deprecates, as must all who are in a position to speak authoritatively, the suggestions made in the press that expenditure in public parks and gardens should cease, and concludes by advising a medium policy and urging the Fellows to support to the fullest measure of their power those who have done so much for the improvement of our plants and vegetables.

In the correspondence between the secretary and a Fellow of the Society, which we print elsewhere, it is urged by the latter that nurserymen should endeavour to attract more business by reducing their prices. On this point we may observe that the answer given by the Secretary is conclusive. As everyone knows, labour is scarcer and less efficient than it was before the war, establishment charges have to be met and yet heavier burdens are impending. The essential facts are that the horticultural industry is, and must of necessity be, depressed; that we are a reasonable people accustomed to compromise; that the best solution will be reached if all who have gardens will act in a spirit of compromise, ordering their seeds and plants on as liberal a scale as is compatible with their present resources. The seedsmen and nurserymen on their part would do

well to remember that not all of the community is suffering financial loss, but that a new public is arising with means to gratify its inherent taste for gardening, and they should seek means whereby that new public may also be reached.

STRAWBERRY ST. FIACRE (see fig. 78).—

The older varieties of autumn-fruiting Strawberries were rather undersized and decidedly lacking in flavour, but the development of these fruits has proceeded rapidly in the past ten years, and there are now many excellent sorts to choose from. One of the best of the newer varieties, and by many considered superior to any, is St. Fiacre, which received the R.H.S. Award of Merit on the 14th ult., when specimens were exhibited by MESSRS. GEO. BUNYARD AND CO., LTD. The berries are remarkably good in flavour, of large size, and very freely produced; but the most noteworthy quality is the strong constitution of the plants: the thick, leathery foliage seems but very little susceptible to fungous attacks.

THE WAR AND THE NURSERY TRADE.—

The following communications between a Fellow and the Secretary of the Royal Horticultural Society respecting the appeal for sufficient orders to support the nursery and seed trade, issued by the Royal Horticultural Society and published in *Gard. Chron.*, August 28, p. 139, are sent us for publication:—

"The Secretary, R.H.S.

"With reference to your circular letter, dated August 17, I venture to offer a word or two. Many Fellows I should say are as badly hit by the war as nurserymen are; the latter should offer some inducement to their customers to send orders for plants. I have lately received a good many catalogues, but I do not notice any reduction of prices in these. Quite common things are still priced at 9d. each. A really absurd price at any time, and quite prohibitive in the present state of affairs.—Faithfully yours,

"Royal Horticultural Society,
Vincent Square, Westminster, S.W.
September 30, 1915.

"DEAR SIR,—

"On the face of it your argument is good, but its appearance alters when you examine it. On the one side:—For some years past the nurserymen have been cutting their profits down as low as possible, so that any further reduction could only be made either by selling at a loss (or, at least, without any profit at all), or by selling inferior stuff. On the other side:—Has not the cost of everything increased? Do the farmers ask less for their corn, cattle, and sheep? Does the fisherman get less for his fish? Or the greengrocer less for his vegetables and fruit? No. One and all have been compelled to advance their charges on account of the general advance in the cost of living and labour. The nursery trade have not yet increased their prices, but they cannot possibly decrease them and avoid bankruptcy. The strain of the times is telling on them almost more than any other branch of commercial life, with the exception, perhaps, of the Stock Exchange. May I ask you carefully to consider these facts before allowing the suggestions of your letter to crystallise?—Yours faithfully,

W. WILKS, Secretary."

CONTRIBUTIONS FROM SCOTTISH HORTICULTURAL SOCIETIES TO RED CROSS FUNDS.—

The Scottish branch of the British Red Cross Society has recently acknowledged contributions from the Hutchestown Gardens' Association, Glasgow; Holmlea Garden Plots Association, Cathcart, Glasgow; Earlsferry and District Horticultural Society; Stonehouse Horticultural Society and Avonbridge Horticultural Society. The Hutchestown Gardens' Association contributed upwards of £65, and the Holmlea Garden Plots Association £25.

R.H.S. FORTNIGHTLY MEETINGS.—Under the Defence of the Realm Act the police have issued an order that all lights in the R.H.S. Hall must be extinguished at 6 p.m., under a £50 penalty. To comply with this regulation it is necessary that all the society's meetings and shows should close at 5 p.m. Exhibitors can begin staging early on the Monday morning preceding the show day.

TRIAL OF HERBACEOUS PAEONIES AT WISLEY.—The date for receiving varieties of herbaceous paeonies for trial at the Royal Horticultural Society's Gardens at Wisley has been extended to October 23, 1915. Growers who wish to enter varieties for trial are requested to send plants at once to the Director, from whom the necessary forms of entry may be obtained.

WAR ITEMS.—Private JOHN B. EWEN, of the 4th Gordon Highlanders, son of Mr. JAMES EWEN, nurseryman, Aberdeen, has been killed in action in France. Deceased was 22 years of age and graduated M.A. in 1914.

—Private DAVID SMITH, 9th Scottish Rifles, son of Mr. WILLIAM SMITH, gardener to Miss DICKSON, Monybuie, Kirkcudbrightshire, has been wounded in France.

—Private JAMES BLACK, of the Cameron Highlanders, eldest son of Mr. BLACK, gardener, Ardlaggan, New Galloway, Kirkcudbrightshire, has also been wounded in the recent fighting in France.

MR. THOMAS COOK.—We regret to state that Mr. COOK, head gardener to H.M. Queen ALEXANDRA at Sandringham, has sustained a sad bereavement in the sudden decease of his wife, which occurred on the evening of the 1st inst. The death was caused by a carriage accident.

FRUIT CROPS AT ST. MALO.—The Board of Agriculture and Fisheries has received a report, dated September 23, from His Britannic Majesty's Vice Consul at St. Malo, to the effect that the early Pear crop from Maine et Loire rather surpassed expectations, exports having been quite up to the normal, but the late crop will not be of much importance. The Apple crop in the district of St. Malo is a good one in some places, and a good medium crop on the whole, but labour for cider-making may be deficient. The prices then ruling were as follows:—Late Pears, £10 per ton (packing extra); table and cooking Apples, £3 12s. per ton (in bulk); cider Apples, 30s. to 35s. per ton (in bulk).

THE BELGIAN AZALEA TRADE.—The difficulties of American nurserymen in obtaining supplies of Azaleas and similar plants from Belgian growers, to which we referred on p. 186, are increasing. It will be remembered that the Allies, having control of the shipping via the English Channel, request that the amount in cash for which each Azalea order is sold be deposited in an English bank, to be held there until after the war. This being done, a permit may be issued allowing free passage for such a shipment. According to a letter from a Dutch firm of growers, published in our contemporary, *The Florists' Exchange*, for September 11, after this became known the Belgian Exporters' Association was notified by the German authorities, who have possession of that part of Belgium where these plants are grown, that in the circumstances export would not be allowed.

THE PLAGUE OF WASPS.—MESSRS. CHIVERS AND SONS, of Histon, near Cambridge, inform us that their bee expert has destroyed no fewer than 307 wasps' nests this season. Including the wasps, grubs and eggs, it is computed that he has killed more than four and a half million wasps, including about 12,000 queens. The wasps were destroyed by injecting into the nests a small quantity of cyanide of potassium in solution, and afterwards the nests were taken out of the ground and the grubs killed separately. As many as forty nests were destroyed in a single morning; one measured over 4 feet in circumference.

CHINESE NAMES OF PLANTS.—We have received from Tokyo Part I. of a new edition of Professor MATSUMURA's *Shokubutsu-Mei-I*, which is entirely novel and is devoted to the nomenclature of the plants of China, Korea, Japan and Formosa. The volume, which consists of more than five hundred pages, is dedicated to Professor AUGUSTINE HENRY, and is founded in part on materials which he furnished to his Japanese colleague. The main part of the work is a list of the Latin names of the plants, arranged alphabetically, and followed in each case by the Chinese name, with references to various authorities. The Japanese name is ap-

in China. Many of the figures given in the celebrated Chinese botanical treatise, the *Chih-Wu-Ming*, are also identified; and we are thus made acquainted with native drawings of interesting species, such as *Primula sinensis*, *Chimonanthus fragrans* and *Trapella sinensis*. The work will be of great assistance to Europeans interested in the floristic or economic botany of the Far East, and will also materially aid the new band of botanists who are doubtless coming forward now amongst the Chinese themselves. Professor MATSUMURA is to be congratulated on the compilation of a work that will be useful to workers in different subjects and of different nationalities.



FIG. 78.—STRAWBERRY ST. FIACRE.

(R.H.S. Award of Merit, September 14, 1915, see p. 232.)

ended in the case of species occurring in Japan and Formosa. There are two indexes, one of all the Chinese names and the other of all the Japanese names that appear in the body of the work. The numerous references to the valuable writings of the late Dr. BRETSCHNEIDER are especially valuable. As an example, on referring to *Pyrus betulaefolia*, not only is given its name "tu-li" in Chinese characters, but also the citation, BRETSCHNEIDER'S *Botanicon Sinicum*, ii., 304, which contains some interesting information concerning this species and other wild Pears

PUBLICATIONS RECEIVED.—*A Critical Revision of the Genus Eucalyptus*. By J. H. Maiden. Part XXII. (Sydney, N.S.W.: William A. Gullett, Government Printer.) Price 2s. 6d.—*Monographie du Genre Primevere*. By S. Mottet. (Paris: Librairie agricole de la maison rustique, 26, Rue Jacob.) Price 2 francs.—*Botany for Senior Students*. By D. Thoday, M.A. (Cambridge: The University Press.) Price 5s. 6d.—*Flora of South Africa*. By Rudolf Marloth. Volume IV. (London: William Wesley & Son.) Price £2 2s. net each volume to subscribers to the whole work.

HOME CORRESPONDENCE.

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

NODULES ON THE INTERMEDIATE BLADDERWORT.—I recently had an opportunity of examining living specimens of a very rare British plant, the Intermediate Bladderwort (*Utricularia intermedia*), and found that the leaf-bearing stems ended in a solitary terminal knob or nodule, the largest being the size of a small Peppercorn. What are these knobs? Are they autumn plant-buds that will ultimately grow into plants? This seems to me a possible solution; but (my edition of) Bentham does not mention that the plant propagates itself in this way, nor are the knobs figured in the companion volume of illustrations by Fitch and Smith. *Harold Evans, Llanishen, Cardiff.*

TRANSFUSION OF SAP.—I do not believe in sap inoculation as accounted for by Mr. Holmes (p. 173). If only it were true, what a blessing it would be! But the idea is two centuries old, as will be seen in the following extract from *The Pleasure and Profit of Gardening*, by the Rev. John Lawrence, Third Edition, p. 41 (Bernard Lintott, 1715):—"I cannot but take notice to you what a noble demonstration the yellow-striped Jessamine has afforded us, of the as certain circulation of the sap in a tree, as of the blood in the body of an animal; which matter, although it has been believed by some, yet it has been denied by others. And, therefore, because it has not as yet (as far as I can learn) been brought to any certainty or demonstration, I shall here relate the means of this noble discovery by virtue of inoculation. Supposing a plain Jessamine tree, spreading itself into two or three branches from one common stem near the root. Into any one of these branches in August inoculate a bud taken from a yellow-striped Jessamine, where it is to abide all winter; and in the summer, when the tree begins to make its shoots, you will find here and there some leaves tinged with yellow, even on the other branches not inoculated, till by degrees in succeeding years the whole tree, even the very wood of all the tender branches, shall be most beautifully striped and dyed with yellow and green intermixed. It is not material whether you cut off the branch above the inoculation to make the bud itself shoot, for it will have the same effect of tinging by degrees all the sap of the tree as it passes by or through this bud, and communicating its virtue to the most distant and opposite branches, though the bud itself should not shoot out. Nay, I have myself several times experienced that if the bud do but live two or three months, and after that happen to die or be wounded by an accident, yet even in that little time it will have communicated its virtue to the whole sap, and the tree will become entirely striped. This discovery undoubtedly proves the circulation of the sap. Q.E.D." W. W.

LARGE PEACHES (see pp. 173, 186).—I send you two fruits of Peach Salvey to show how they compare with some of the large Peaches mentioned by your correspondents. One fruit weighs about 19oz., the other turns the scale at 18oz. I sent you a large fruit of the same variety some three or four years ago. *George Brown, Brownsea Island Gardens, Poole, Dorsetshire.*

[The fruits were magnificent specimens, not only on account of their large size, but for general fine appearance and absence of blemish. Hogg, in *The Fruit Manual*, states that the variety was raised by Colonel Salvey from a Peach stone brought from Italy, and was sent into commerce by Mr. Chas. Turner, Slough.—EDS.]

HOSPITAL GARDENS AS A SOURCE OF THRIFT.—In these times of economy and thrift, when it is no less the duty of public institutions than of private individuals to practise rigidly the system of saving, an example of what may be done in this direction has recently been given in an article in *The Hospital*, describing the garden attached to the Royal Devon and Exeter Hospital. Mr. P. C. M. Veitch, of the Exeter Nurseries, is one of the governors of the hospital, and he personally superintends the whole of the prac-

tical work of the garden, which covers an area of about 1½ acre. Apples, Pears, Plums, Gooseberries, Raspberries, Strawberries and other fruits give an excellent successive supply, according to the season. Vegetables also do well. Since the Committee assumed the management of the garden in 1911, the income has steadily increased year by year; thus in 1911 its value amounted to £144, in 1912 £147, in 1913 £157, and in 1914 £177. As an indication of the productiveness of this acre and half garden, it may be stated that in 1914 the yield of fruit was as follows:—19,505 Apples, 4,800 Pears, 253 Plums, 7½ cwt. Raspberries, 5½ cwt. Strawberries, 1½ cwt. Gooseberries. Vegetables included 45 cwt. of Potatoes, 386 heads of Cauliflowers, 106 heads of Broccoli, 253 lbs. of Brussels Sprouts, and 8,685 Cabbages. The fruits are for the most part gathered by the nurses in their spare time, and converted into jam in the kitchen of the hospital. *J. R. Jackson.*

LARIX PENDULA.

From the remarks made on p. 204 by Mr. C. C. Rogers concerning the specimens of *Larix pendula* at Stanage Park, it is evident that some points in my long and technical article in a previous issue, p. 178, require elucidation. The original tree of *Larix pendula*, which was a chance cross, combined the characters of its two parents, *L. europaea* and *L. americana*, as is evidenced by the twigs with cones of the actual tree which are preserved in the British Museum. The trees now in cultivation ascribed to *L. pendula* are the descendants of the original tree, being hybrids of the second, third and fourth generations; and, as always is the case with such descendants, are not identical in appearance with the original first cross; but are extremely varied, comprising probably 16 or 32 sorts of trees, exhibiting every possible combination of the parental characters; some individuals striking the casual observer as being on the whole like one parent (*L. europaea*), whilst others seem to favour *L. americana*, and some are so-called intermediates. One of the trees at Stanage Park, as Mr. Rogers states, is not *L. europaea*, as it has the smooth and finely-scaled bark which appertains to the American Larch. The cones, though nearly equalling in size those of the European species, differ in the shape both of the scales, which have a bevelled margin, and of the bracts. The twigs in their first year have the beautiful glaucous bloom which is so characteristic of *L. americana*. This Stanage Park tree illustrates well the way in which a second—or third—generation hybrid may show characters derived partly from one parent and partly from the other parent of the original cross, and argues nothing concerning the prepotency of one or other parent.

Larix pendula and its varied descendants are in no way connected with *Larix dahurica*, which is a wild species of Eastern Asia, unknown in England except by two or three small trees in Kew Gardens, and by seedlings recently raised from seed imported from Saghalien and Korea in 1913 by several nurserymen. That the hybrid bore erroneously for a time the name of *L. dahurica* is regrettable; but the history of *L. pendula* illustrates the slow and painful progress of knowledge.

The specimen of the original *L. pendula* in the British Museum, and the accurate drawings of it in Lambert's *Pinus*, have puzzled botanists till recently. The possible hybrid origin of a tree in cultivation was in former days unsuspected; and the problem seemed to be simply to find where this peculiar Larch occurred in the wild state. Lambert, Loudon and Lawson believed that *L. pendula* was wild in North America. Two great authorities, Masters and Sargent, actually considered it to be identical with *L. americana*, which is, of course, impossible. No such tree has ever been seen or collected in any part of Canada or the United States. Finally, it was

supposed at Kew and by the late Professor Mayr, of Munich, to be the same as *L. dahurica*. All that can be pleaded in mitigation of this error is that some of the progeny of *L. pendula* have cones very like those of *L. dahurica*. I acquiesced in this identification in 1907, when I wrote the description of the Larch genus in Vol. II. of *Trees of Great Britain*. Since that date much knowledge has been gained of numerous trees in cultivation, which are not, as had been previously supposed, identical with any actual wild trees, but have in each case originated as a chance (usually solitary) hybrid seedling or as an isolated sport.*

I may now add some further notes concerning the great variation that has been observed in the progeny of certain individuals of *L. pendula*. The sixteen Larches at Murthly, ascribed to this hybrid, which were raised from one batch of seed by Messrs. Benj. Reid, of Aberdeen, forty years ago, are remarkably different from one another. Mr. J. M. Murray, B.Sc., the Assistant Forester, writes to me: "The seedlings that have been raised here from these trees are the most varied lot that I have ever seen. One plant to all appearance is a glaucous *L. europaea*, but its young shoots bear dark hairs. Others have glabrous shoots; but the colour of the twigs in the second year is unlike that of the European Larch. In foliage, some seedlings are glaucous, others are grass-green. There is also a decided difference in the rate of growth of the various plants."

In 1871, Regel, in *Gartenflora*, XX., p. 102, t. 684, figs. 10, 11, described a remarkable Larch in the Petrograd Botanic Garden, which he correctly identified with *L. pendula*, but of which he did not suspect the hybrid origin. This tree had a curious shape, dividing at the base into three stems, the two lateral prostrate and widely spreading, the middle stem erect, but with deflexed branches like those of the Bayfordbury Larch (*Gardeners' Chronicle*, September 18, 1915, fig. 61). Regel states that the seeds of the tree in the Petrograd Botanic Garden were repeatedly sown, the resulting seedlings being remarkably different *inter se*. The greatest number of the plants were of upright habit, though some of these in a few years reverted to the prostrate form; whilst other seedlings were prostrate from the beginning. The extraordinary Larches at Henham and in the Cambridge Botanic Garden, with long horizontal stems supported on pillars, may be similar seedlings. Mr. A. B. Jackson writes to me that the fine *L. pendula* at Woburn, which measured last year 92 feet in height and 7½ feet in girth, was probably planted between 1803 and 1809. It is evidently, then, one of the trees raised from the seed of the original tree. Seedlings lately raised from the Woburn tree are growing vigorously. Some individuals of *L. pendula* at other places seem, however, to yield little or no fertile seed.

It would appear that in addition to the combination of all the characters of two parents by crossing, there are also peculiarities of form, colour, and other characters occasionally manifested in the offspring. Observations, moreover, show that hybrids, while often marvellously vigorous in their vegetative parts (large leaves, long internodes, etc.), are liable to have defective reproductive organs. Pollen grains of the hybrid Black Italian Poplar (*Populus serotina*) that were examined here last spring seemed to be all, or nearly all, bad, shrivelled or misshapen. The pollen grains of the wild species, *Populus nigra*, were uniformly globose in shape, and developed pollen-tubes in sugar solutions. Further experiments in regard to pollen of reputed hybrids are well worth carrying out. *A. Henry.*

* See my article on *Artificial Production of Vigorous Trees*, in *Dept. of Agric. Ireland Journal*, October, 1914, p. 34, where I have discussed at length, species, sports, and hybrids.

† Described in *Trees of Great Britain*, Vol. VII., p. 1938.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLVIII).

LA SITUATION DE L'HORTICULTURE EN BELGIQUE.

DANS un article commentant les visées allemandes sur les produits horticoles belges, publié il y a quinze jours, nous faisons remarquer que les Allemands, par l'organisation de leur ObstZentrale, semblaient viser à la suppression de la concurrence en vue de régler les cours des produits horticoles, au détriment des producteurs.

Cette opinion se trouve confirmée. Les protestations de sympathie du gouvernement provisoire à l'égard des horticulteurs belges deviennent lamentablement ridicules en présence des mesures prises récemment; l'exportation de fruits et légumes est officiellement interdite et déjà un prix maximum aurait été fixé! Ces mesures peuvent s'expliquer s'il s'agit de matières indispensables pour lesquelles il y a une pénurie à craindre, et dont les prix pourraient atteindre un taux exagéré, mais elles s'appliquent aussi à celles qui doivent nécessairement être exportées, parce que toute la consommation belge, allemande et autrichienne est insuffisante pour assurer leur utilisation. Comment, par exemple, se débarrassera-t-on de la Chicorée de Bruxelles dont la production brabançonne exige un marché mondial, et pour laquelle, eu égard à sa qualité de légume de luxe, la demande devra être réduite maintenant dans les états centraux. Dans des conditions semblables, l'interdiction d'exporter devient de la pure vexation qui cadre mal avec les procédés—peu adroits d'ailleurs—mis en œuvre pour capter la sympathie des populations vivant sous le joug. Cependant le souci des intérêts de la population agricole a poussé le gouvernement général à publier un journal hebdomadaire pour les agriculteurs de la Belgique, appelé *Le Cultivateur*. Ce journal est distribué par le chef de l'arrondissement ("Kreischef") ou par les bourgmestres.

Les fruits de verger sont très abondants dans le pays de Herve et l'activité est grande dans les siroperies qui sont toutes au travail. Beaucoup de producteurs se sont remis à fabriquer eux-mêmes les sirops suivant des procédés domestiques qui donnent un produit plus recherché. On signale déjà que le Raisin se vend à des prix se rapprochant des niveaux bas connus lors de l'invasion (30 et 35 centimes le kilo). Faudra-t-il que l'on se remette à faire du vin, comme ce fut le cas en 1914? Suivant des renseignements de source autorisée, le maximum payé par l'ObstZentrale pour les Raisins d'exportation, donc de toute première qualité, ne dépasserait pas 1 fr. à 1 fr. 20; or, à cette époque de l'année, le Gros Colman d'exportation doit se payer, pris en culture et sans emballage, 2 fr. 75, le Muscat d'Alexandrie 5 à 8 fr. le kilo. Voilà donc un maximum inférieur au cours normal et on a peine à croire que les Allemands appliqueraient à la lettre une prescription qui paraît déjà excessive pour les beaux produits des variétés ordinaires.

L'activité des Allemands dans les régions maraîchères est très intense. Une de leurs revues horticoles vient encore de souligner l'importance que le marché des légumes de Malines présente pour eux. Elle signale qu'en temps de paix on y écoulait, pendant la saison, 25,000 bottes d'Asperges par jour; les envois de Pommes de terre hâtives vers la Westphalie et la province rhénane atteignent trente à trente-cinq wagons; pour les Choux-fleurs il faut quinze à vingt wagons, et les expéditions de petits pois vers l'Allemagne s'élèvent à 40,000 ou 50,000 kilos, le tout par jour.

Mais... le rôle de Malines est devenu plus important pour eux pendant cette guerre. On y a créé une Centrale des Pommes de terre (KartoffelZentrale) qui, sous l'égide du gouvernement civil, se livre à la même besogne que l'ObstZentrale de Bruxelles.

Pendant le mois d'août les cours suivants en francs furent cotés à Malines, pour les périodes du 1 au 7, 8 au 15, 17 au 24, 24 au 31.

	Les 100 kilos.			
	13	10-30	8	9
Pommes de terre (rondes) ..	13	10-30	8	9
" " (longues) ..	15	11-50	9	11
Oignons ..	17	17	17	16
Carottes ..	13	18	19	16
Choux rouges ..	22	22	22	45 (?)
Choux blancs ..	14	13	13	15
Tomates ..	22 (?)	16	25	28
Haricots verts ..	24	38	45	40
Choux-fleurs, le cent ..	30	34	26	—
Poireaux ..	4	4	4	4
Céleris ..	5	5	5	7
Choux de Milan ..	—	—	—	10

D'ordinaire à cette époque, de nombreuses expositions horticoles se succèdent en Belgique, terre promise de l'horticulture et de l'association. Cette année, le deuil de la patrie a fait abandonner la plupart des projets; là où l'on y donne suite, les recettes sont consacrées à des œuvres de secours, spécialement pour les prisonniers de guerre. Elles attirent alors une grande affluence de visiteurs. C'est ainsi qu'à l'exposition de Liège, on enregistra 19,000 entrées payantes, de plus 30,000 numéros pour la tombola furent placés. La collection de plantes de l'amateur réputé, M. Massange, y fut très remarquée.

A Anvers les cours de l'école professionnelle d'horticulture ont repris. Les démonstrations pratiques ont lieu sur des terrains couvrant quatre hectares et pourvus de plusieurs grandes serres. L'enseignement, réservé aux jardiniers et horticulteurs, se donne surtout le dimanche et comporte trois sections.

En Flandre la situation chez les horticulteurs est plus difficile qu'ailleurs parce qu'on s'y trouve encore sous le régime militaire, à cause de la proximité du front. Les relations avec Bruges et Gand sont moins faciles qu'avec le reste du pays.

NOUVELLES DIVERSES.

EMPLOI DES JARDINIERS MUTILÉS.—On se préoccupe sérieusement des difficultés qui seront rencontrées après la guerre par les jardiniers blessés ou malades dont le rendement aura été atteint. En Allemagne des réunions et congrès étudient les remèdes. On estime qu'il y a dans ce pays environ 200,000 hommes occupés dans les établissements horticoles; 100,000 auraient été mobilisés. Déduction faite de ceux qui sont trop mutilés pour être employés, un millier reviendront avec perte d'un membre, un autre millier, présume-t-on, devront trouver des ménagements spéciaux à cause des troubles résultant de leurs blessures ou maladies. On estime que l'horticulture allemande peut procurer à tous une occupation qui leur permettra de ne pas être dépendants seulement de leur pension éventuelle ou de la charité publique.

LES BESOINS DE L'ALLEMAGNE.—En juillet dernier, l'Allemagne a reçu en produits horticoles de la Hollande: Fraises, 4,059,700 kilos; Pommes, 135,700; Poires, 644,800; Raisins, 54,300; Groseilles à maquereau, 1,212,700; Groseilles à cassis, 41,500; Groseilles à Grappes,

1,545,700; Choux-fleurs, 2,511,800; Oignons, 2,568,500; Concombres, 15,396,600; Tomates, 456,900; Carottes, 652,700; Choux-cabus, 863,300 kilos. Ces expéditions dépassent notablement celles faites vers l'Angleterre qui a absorbé à peu près toute l'exportation de Groseilles à cassis (995,700 kilos) et des quantités relativement élevées de Poires (473,600 kilos), Groseilles à Grappes (1,151,100) et Carottes (354,000).

LES MARCHÉS COOPÉRATIFS EN HOLLANDE.

Un ami nous communique des renseignements qu'il a reçus d'un horticulteur de Loosduinen au sujet des affaires faites là-bas au cours de la saison écoulée. Ces renseignements confirment notre manière de voir en ce qui concerne l'influence de la guerre sur la situation économique de l'horticulture. Le chiffre d'affaires à Loosduinen n'atteindra pas le total réalisé l'année dernière parce que les Laitues de chassais qui présentent une importance considérable pour la contrée ont été vendues à des prix dérisoires. Les cours des Concombres de chassais ont été inférieurs également, mais les producteurs se sont rattrapés sur les Concombres de serre et les Tomates forcées qui se sont vendus très cher. En résumé, la crise redoutée ne s'est pas produite et les maraîchers se déclarent satisfaits. D'autre part, au marché voisin de Poeldijk, le total des ventes pour les huit premiers mois de l'année s'élevait à 980,000 francs, en augmentation de 205,000 francs sur la période correspondante en 1914. Vers la mi-juin, cependant, la mévente des Laitues entraînait encore un déficit de 80,000 francs. A Naaldwijk, autre marché important de la région, le chiffre d'affaires atteint 930,000 francs, soit une augmentation de 260,000 francs. En juin le déficit était de 60,000 francs. Les trois derniers mois y accusent donc une amélioration de 320,000 francs.

LA RECONSTRUCTION EN BELGIQUE.

Les Allemands font des efforts pour amener la population à reconstruire les villes et villages détruits par leurs troupes. Leurs avances reçoivent un accueil peu empressé et ils reprochent au gouvernement belge du Havre de mettre obstacle à leurs plans. Nous avons signalé qu'un règlement de bâtisses pour les localités détruites a été élaboré en vue d'assurer la reconstruction suivant des plans d'ensemble.

KORT OVERZICHT VOOR DE VLAMINGEN.

De Duitschers trachten meer en meer voordeel te trekken uit hunne bezetting van België om hun tekort aan levensmiddelen aan te vullen. Een uitvoerverbod is uitgevaardigd voor fruit en groenten. Deze maatregel is van toepassing voor vruchten die noodzakelijkerwijze in den vreemde moeten verkocht worden. Er zouden ook prijzen gesteld zijn die niet mogen te boven gegaan worden, en die prijzen schijnen in sommige gevallen lager dan de gewone!

In de omstreken van Mechelen hebben hunne vertegenwoordigers het zeer druk om de groenten weg te halen. Door het Duitsch bestuur wordt thans ook een weekblad voor landbouwers uitgegeven.

Men houdt zich bezig met de middelen om aan zieke en verminkte hoveniers een degelijke broodwinning in den tuinbouw te verzekeren. In Duitschland o. a. belegen ze vergaderingen en congressen met dat doel. Men schat er dat, na den oorlog, één per honderd der in den tuinbouw gebruikte arbeiders hun werkvermogen zullen verminderd zien.

Exhibition of British-Grown Fruits.

October 5 and 6.

THE Annual Fruit Show of the Royal Horticultural Society was held on Tuesday and Wednesday last in the Vincent Square Hall, Westminster. Last year the military was in occupation of the Hall, and no other suitable building being available the show was abandoned. Although the present exhibition was a success, and the general excellence of both Apples and Pears was remarkable, the show was not equal to that of some former seasons. Notwithstanding this, the building was well filled and the attendance was satisfactory. In the Apple and Pear classes, which comprise the principal features of these shows, there was good competition. But the most satisfactory feature was the three classes allotted to traders. The efforts displayed in these classes did much to make amends for shortcomings in other directions, and in the largest trade class no fewer than three Gold Medals were awarded.

DIVISION I.

COLLECTIONS OF HOTHOUSE FRUITS.

(Classes open to Amateurs and Gardeners only.)

There were two classes for collections of dessert fruits, for nine dishes and six dishes respectively. The larger class called for six kinds, and the exhibitor was not permitted to show more than one Pineapple, one Melon, or one variety of Black and White Grapes respectively. Two varieties of any other kind were admissible, but not the two same varieties. Three competed, and the 1st prize was awarded to the Duke of NEWCASTLE, Cumber, Workop (gr. Mr. S. Barker). His bunches of Muscat of Alexandria Grapes were on the small side, but shapely and perfect of berry, the rich amber colour and deep bloom being remarkable. There were also two excellent bunches of Madresfield Court Grapes, splendid Marguerite Marillat and Doyenné du Comice Pears, Humboldt Nectarines, Dymond Peaches, and Cox's Orange Pippin and Rival Apples. 2nd, Lord SOMERS, Eastnor Castle, Ledbury (gr. Mr. G. Mullins). A fruit of Emerald Gem Melon was excellent, and this exhibitor showed big fruits of well-coloured Apple Chas. Ross and large bunches of Black Alicante Grapes. 3rd, Lord HILLINGDON, Sevenoaks, Kent (gr. Mr. J. Shelton).

Three competed in the class for six dishes, in which C. A. CAIN, Esq., Welwyn (gr. Mr. T. Pateman), excelled. Doyenné Boussoch Pears were splendid. The two bunches of Muscat of Alexandria Grapes were shapely and well coloured, and there were large Peaches of Sea Eagle and Lady Palmerston varieties. 2nd, Major ST. MAUR, Newton Abbot (gr. Mr. G. F. Richardson).

GRAPES.

Much the best Grapes were shown by the Duke of NEWCASTLE in the class for a collection of six distinct varieties, in which two competed. The centre was graced by a superb bunch of Gros Guillaume, weighing about 9lb.; the berries were sloe-black and as well finished as those of a good bunch of Black Hamburgh. On either side were two splendid bunches of Muscat of Alexandria, with berries of the finest quality, the colour and finish being superb. Other varieties in this exhibit were Madresfield Court, Mrs. Pearson, Black Alicante and Gros Colman. 2nd, Lord HILLINGDON.

Collection of Four Varieties.—Mr. C. A. CAIN, the only exhibitor, was awarded the 1st prize for Muscat of Alexandria, Madresfield Court, Mrs. Pearson and Muscat Hamburgh.

BLACK GRAPES.—Lord HILLINGDON showed the best *Black Hamburgh*, in two compact bunches of medium size; 2nd, B. E. RICHARDSON, Esq., Stanstead Abbots, Ware (gr. Mr. E. Coleman). The Duke of NEWCASTLE won easily in the class for *Mrs. Pince*; 2nd, G. MILLER, Esq., Radlett (gr. Mr. J. Kidd). In the class for *Black Alicante* competition was keen and the

exhibits generally reached a good standard. The 1st prize was won by Mrs. W. RAPHAEL, Castle Hill, Englefield Green (gr. Mr. H. Brown), whose bunches were shapely, well-matched and finely finished; 2nd, Lord SOMERS, Eastnor Castle (gr. Mr. G. Mullins), with larger bunches. *Madresfield Court* was only of mediocre quality; the best bunches were shown by the Marquis of SALISBURY, Hatfield (gr. Mr. H. Prime). *Prince of Wales* was shown best by Sir WALPOLE GREENWELL, Bart., Woldingham (gr. Mr. W. Lintott), and G. MAYER, Esq., of Woldingham (gr. Mr. T. Newman) was placed 2nd.

The 1st prize for any other variety of Black Grape was won by the Duke of NEWCASTLE with Muscat Hamburgh; 2nd, Viscount ENFIELD, Wrotham Park, Barnet (gr. Mr. H. Markham), with Appley Towers.

WHITE GRAPES.—The class for *Muscat of Alexandria* attracted seven competitors, and all the exhibits were very good. The 1st prize was won by the Duke of NEWCASTLE with bunches that excelled easily for degree of colouring and general good finish; 2nd, C. A. CAIN, Esq.

Two competed in the class for any other White Grape, and both showed Lady Hutt variety. The smallest bunches were placed 1st, but the berries were larger and of richer bloom and colour than the others. The exhibitors were Mr. C. A. CAIN and Mr. G. MILLER respectively.

COLLECTION OF HARDY FRUITS.

Four exhibits were forthcoming in this class, which was for a collection of hardy fruits exhibited on a table space 12 feet by 3 feet, and each was praiseworthy. The finest fruits were also the most daintily arranged; the exhibitor was F. BIBBY, Esq., Hardwicke, Shrewsbury (gr. Mr. J. Taylor). His Apples, Pears and Plums were exceptionally good, but the Peaches and Nectarines not such strong features as in some of the other collections. Pears Marie Benoist, Doyenné du Comice, Souvenir du Congrès and Marguerite Marillat; Apples James Grieve, Coronation, Norfolk Beauty and Chas. Ross; and Plums President, Monarch and Coe's Golden Drop are a selection.

Lord SOMERS followed closely with excellent Blenheim Pippin, Chas. Ross, The Queen, and Gascoyne's Scarlet Seedling Apples; Triomphe de Vienne and Beurré Superfin Pears; Jefferson Plums; and good Spencer and Pineapple Nectarines.

DIVISION II.

NURSERYMEN'S CLASSES.

(Fruits Grown Entirely Out of Doors.)

This section of the Show was a great success. The prizes consisted of medals awarded at the discretion of the Council, and in the largest class no fewer than three Gold Medals were awarded, which we believe is an unprecedented number in a single class at these shows.

The premier class was for an exhibit arranged on a space of 30 feet run by 6 feet of tabling, and the Gold Medals were awarded to Mr. J. ALLGROVE, Langley; Messrs. G. BUNYARD and Co., Ltd., Maidstone; and Messrs. H. CANNELL and Sons, Eynsford. Mr. Allgrove's exhibit was noteworthy for the great variety and excellent quality of the Apples and Pears. Two prominent features in the exhibit were groups of Apples Rev. W. Wilks and Chas. Ross, the one of very large fruits, the other noteworthy for large size and splendid colouring.

The Pears in this exhibit were very good, and showed every evidence of good culture. The variety *Urbaniste* was especially noticeable, the fruits showing the rounded contour peculiar to good specimens of the kind, and being very free from blemish.

Messrs. G. BUNYARD and Co. showed a fine collection of fruit, chiefly Apples, including well-grown specimens of most of the best sorts in cultivation, 160 varieties being represented. Pears were especially well shown, many of

the varieties being of first-rate quality. There was a fine box of Doyenné Boussoch, the fruits being well coloured and clean, besides being of large size and even shape. Marguerite Marillat was also noticeable for large size and freedom from blemish, most of the fruits being also well coloured. St. Luke was represented by a dish of clear, shapely specimens, and Black Worcester (or Verulam) was shown at its best.

Messrs. H. CANNELL and Sons showed an excellent collection of fruit, chiefly Apples and Pears. Perhaps the most remarkable dish was that of Dumelow's Seedling (syn. Wellington), the specimens being specially large and of excellent form and colour. Fruits of Lady Sudeley were brilliantly coloured and of general fine appearance. The variety Eynsford Seedling, one of the firm's own raising, was represented by a very creditable dish of specimens, of large size and good, rounded form. The variety should prove popular. There were also very fine specimens of Pear Doyenné Boussoch; whilst Plums Belle de Septembre and Coe's Golden Drop were represented by choice specimens.

Messrs. J. CHEAL and Sons, Crawley, Sussex, showed a fine collection of fruit, chiefly Apples, including good specimens of Peasgood's Nonesuch, Golden Noble and Worcester Pearmain. Pears were also represented, Beurré Hardy and Doyenné Boussoch being well shown. (Silver-gilt Knightian Medal.)

Messrs. W. SEABROOK and Sons, The Nurseries, Chelmsford, showed a good collection in which Apples were chiefly represented. There were some very good specimens of Cellini, Rival, and Charles Ross. Pears were also well shown, the varieties Pitmaston Duchess, Durondeau and Beurré Hardy being represented by some large specimens. (Silver Knightian Medal.)

Three exhibits were staged in the class for a collection occupying a table space of 20 feet by 6 feet.

Mr. R. C. NOTCUTT, Woodbridge, had an exhibit of much merit, including Pears of several varieties. The specimens of Apples Charles Ross, Scarlet Pearmain, Fearn's Pippin and Bismarck were particularly good. (Silver-gilt Knightian Medal.)

Messrs. S. SPOONER and Sons, Hounslow, made a very creditable display, chiefly consisting of Apples. Most of the popular varieties were shown at their best, James Grieve and Lane's Prince Albert being particularly fine. (Silver Knightian Medal.)

The BARNHAM NURSERIES, SUSSEX, also made a good display in this class, chiefly consisting of Apples. There were fine specimens of Lane's Prince Albert and Newton Wonder. (Silver-gilt Banksian Medal.)

Mr. CHARLES TURNER, Royal Nurseries, Slough, staged a very fine collection of fruit on a table 12 feet by 6 feet. Apple Charles Ross was particularly well shown, and there were also fine specimens of Emperor Alexander, Baron Wolsley and Cornish Giant. Pears were represented chiefly by well-grown specimens of Doyenné du Comice and Charles Ernest. (Silver-gilt Banksian Medal.)

Messrs. G. COOLING and Sons, Bath, showed a similar group, comprising good specimens of the best varieties of Apples and Pears. Apple Rev. W. Wilks was represented by some large specimens. Peasgood's Nonesuch, Stirling Castle and Frogmore Prolific were also well shown. A dish of Quinces was included in the exhibit, and also a basket of Plums Coe's Golden Drop, both well grown and of good colour. (Silver Knightian Medal.)

ORCHARD HOUSE FRUIT AND TREES.

The only exhibit in a class for orchard house fruit and trees was shown by the KING'S ACRE NURSERY Co., Hereford, and received a Gold Medal. In former years Messrs. Rivers and Son and Messrs. Bunyard and Co. have staged

fine exhibits of this nature which were greatly missed on this occasion, as these groups are an important feature and afford a striking relief to the rows of plates on the flat. The fruit trees were heavily cropped, and consisted of Apples and Pears, with an umbrella-trained specimen of Peach Golden Eagle, Apples Emperor Alexander, King of Tompkins County and Gascoyne's Scarlet Seedling were all meritorious, and there was a remarkably fine tree of Pear Doyenné du Comice. The gathered fruits in front were choice specimens, and included Pears Marie Louise, Santa Claus and St. Luke, and Apples Blenheim Pippin, Gascoyne's Scarlet Seedling and Washington.

DIVISION III.

(Open Only to Market Growers.)

There was only one exhibitor in the class for twenty baskets of cooking and dessert Apples, distinct, Messrs. GASKAIN AND WHITING, of Dargate, Faversham, to whom was awarded the Standard Cup which constituted the first prize. The fruit was of very high quality and of large size.

For twelve baskets of Apples (six each of culinary and dessert varieties) the first prize was awarded to Lt.-Col. H. LUMLEY-WEBB, Ham Green, Upchurch (gr. Mr. J. Holloway), who also gained the Silver-gilt Medal presented by the Fruiterers' Company. His specimens of Peasgood's Nonesuch were particularly good. The second-prize collection was shown by THE HORTICULTURAL COLLEGE, Swanley. The fruit was of a high standard of excellence, and particularly free from blemish. (Silver-gilt Knightian Medal.)

For six baskets of Pears, distinct, Messrs. GASKAIN AND WHITING were again the only competitors, and were awarded a Silver Knightian Medal. The fruits were well grown, and fully merited the award.

DIVISION IV.

FRUITS GROWN ENTIRELY IN THE OPEN.

(Gardeners and Amateurs Only.)

There were fifteen classes in this section, which were principally for Apples and Pears. Plums, Damsons, Cherries, Raspberries and Alpine Strawberries were also included, but these were poorly represented, the Plum class being the best.

APPLES.—The most important of the Apple classes was for twenty-four dishes, distinct, to include sixteen culinary and eight dessert sorts.

The best of three exhibits was shown by Mr. C. A. CAIN, whose fruits were of large size and intensely coloured. At the back were staged very large fruits of Lord Derby, Branley's Seedling, Gloria Mundi, Striped Beefing, Gascoyne's Scarlet Seedling, Newton Wonder, Lane's Prince Albert, Bismarck and other culinary sorts, whilst the front row comprised superb fruits of The Houblon, Ribston Pippin, Wealthy, Chas. Ross, Rival and Cox's Orange Pippin. Lord SOMERS followed closely, and although his fruits were perhaps a trifle smaller, the quality was grand. Fruits of Gascoyne's Scarlet Seedling were as good as could be desired, while others of special merit were The Queen, Mère de Ménage, Warner's King, Newton Wonder (finely coloured), Lady Henniker and Loddington. Of the dessert varieties, King of the Pippins, James Grieve, The Houblon, Coronation and Lord Hindlip were all excellent.

The next class in importance was for eighteen dishes of Apples, distinct, comprising twelve culinary and six dessert varieties.

The Earl of LYTON, Knebworth, Stevenage (gr. Mr. H. Brotherton), was awarded the 1st prize for an exhibit which was good in every respect. The dessert varieties, Worcester Pearmain, Allington Pippin, Wealthy and Rival, were all highly coloured, whilst of the culinary sorts we may select Gascoyne's Scarlet Seedling, Lane's Prince Albert, The Queen, Gloria Mundi and Tyler's Kernel as being the best. The only other exhibitor showed fewer dishes than eighteen, and was in consequence disqualified.

Only two exhibits were forthcoming in the class for twelve dishes of Apples, eight cooking and four dessert varieties. JOHN LIDDELL, Esq., Basingstoke (gr. Mr. R. Learmouth), won the 1st prize easily, his fruits being very fine, and especially Gloria Mundi, The Queen, Emperor Alexander, Lord Derby, Rival, Chas. Ross and Wealthy.

Better competition was seen in the class for six dishes of culinary Apples. Mr. CAIN was a good 1st prize winner, with splendid fruits, well staged. The varieties were Warner's King, Lane's Prince Albert, Branley's Seedling, Rev. Wilks, Peasgood's Nonesuch and Emperor Alexander. 2nd, Mr. JOHN LIDDELL.

A class for dessert Apples called for six distinct varieties.

The three exhibits in this class were very attractive. Lord SOMERS carried off the 1st prize with model specimens of King of the Pippins, The Houblon, Wealthy, Allington Pippin, James Grieve and Ribston Pippin. 2nd, Mr. JOHN LIDDELL, whose fruits of Blenheim Pippin and Worcester Pearmain were coloured to an intense degree.

PEARS.—Pears were well shown, and the competition was rather better than in the Apple classes. For eighteen dishes of dessert varieties, distinct, Mr. CAIN led with grand fruits. Doyenné du Comice was large, and carried a heavy flush of red; Durondeau was also well coloured and big; Louise Bonne of Jersey, Pitmaston Duchess, Doyenné Boussoch, Conference and the dark, russety St. Luke were also shown finely. 2nd, Mr. J. SMITH, Worth. He showed Souvenir du Congrès, Louise Bonne of Jersey, Durondeau, Marguerite Marillat, Beurré Hardy, Conference, Princess and others.

Lord SOMERS excelled in the class for twelve dishes of dessert Pears, distinct. It was a magnificent collection, and included the varieties Souvenir du Congrès, Doyenné du Comice, Louise Bonne of Jersey (highly coloured), Triomphe de Vienne, Durondeau and Marie Benoist. The 2nd prize was won by Major POWELL-COTTON, Birchington (gr. Mr. J. Comford), his most notable dishes being of Marguerite Marillat.

The Earl of LYTON excelled in the class for nine varieties of dessert Pears, and Mr. CAIN in the smaller class for six dishes, distinct.

STEWING PEARS.—The best three dishes of stewing Pears were exhibited by Dr. T. JACKSON, Thornton Heath (gr. Mr. W. Paulby), who showed the varieties General Todleben, Catillac and Uvedale St. Germain; Sir HERRERT LEON, Bart., Bletchley Park, Hertfordshire (gr. Mr. G. Cooper), followed closely, his fruits of General Todleben having more colour than any in this section. There were also excellent fruits of Bel-lissime d'Hiver in this exhibit.

PLUMS.—Eight competed in a class for three dishes of Plums, distinct. C. H. BERNERS, Esq., Woolverstone Park, Ipswich (gr. Mr. Messenger), excelled with splendid fruits of Reine Claude de Bavière, Coe's Golden Drop and President. 2nd, C. H. COOMBE, Esq., Cobham Park, Surrey (gr. A. Tidy), with Coe's Golden Drop, Diamond and Rivers' Late Orange.

Mr. F. G. GERRISH, Pendley Manor Gardens, Tring, showed the best Morello Cherries and the best Damsons; and Mr. J. LIDDELL the best Raspberries in November Abundance.

DIVISION V.

SPECIAL COUNTY CLASSES.

(Open to Gardeners and Amateurs Only.)

These classes are divided into two sections, one for Apples and one for Pears, the number of dishes of Apples to be shown being four cooking and two dessert varieties, and the number of Pears six dessert varieties. The grouping of the counties is arranged so that, so far as possible, all the competitors in one class possess the same advantages and disadvantages of climate and rainfall.

Kent.—It was surprising to find that the Rev. H. A. BULL, Westgate, was the only competitor, and he was awarded the 1st prize both for Apples and for Pears.

Surrey, Sussex and Hants.—There were four

competitors, the fruit shown being very creditable. The 1st prize for Apples was awarded to Sir JAMES HORLICK, Bart., West Dean Park, Chichester (gr. Mr. W. H. Smith), his specimens of Rival, Charles Ross and Lane's Prince Albert being particularly good. For Pears, the 1st prize was gained by the Rev. M. McMURDIE, for exceedingly well-grown fruits, among which Marguerite Marillat and Beurré Diel were noticeable. The 2nd prize for Apples was obtained by C. H. COMBE, Esq., while for Pears Mr. A. SMITH, Roehampton, was placed 2nd.

Wilts, Dorset, Somerset, Devon and Cornwall.—Three competitors sent exhibits of Apples, the generally high standard speaking well for fruit-growing conditions in the extreme West of England. The 1st prize was awarded to F. J. B. WINGFIELD DIGBY, Sherborne Castle, for good specimens, among which James Grieve, though not very large, were noticeable for good form and colour. The 2nd prize was awarded to Lady MARY MORRISON, Tisbury, Wiltshire (gr. Mr. H. Mills), who showed, among others, large specimens of the Rev. W. Wilks. The same two competitors won the 1st and 2nd prizes for Pears, Mr. DIGBY's Durondeau being of especially good form and colour.

Gloucester, Oxford, Buckinghamshire, Berkshire, Bedfordshire, Hertfordshire and Middlesex.—It was also surprising to find only two competitors in this class. The 1st prize was awarded to E. E. PEARSON, Esq., Brickendonbury, his fruits of Emperor Alexander being especially good. The 2nd prize was won by J. B. FORTESCUE, Esq., Maidenhead, with a good collection. The same competitor was successful in winning the 1st prize for Pears, among which Triomphe de Vienne and Beurré Hardy were very good. The 2nd prize for Pears was awarded to the Marquis of SALISBURY, Hatfield House (gr. Mr. H. Prime).

South-Eastern Counties.—This section was represented by only two exhibits of Apples and three of Pears. The 1st prize for Apples was won by the Rt. Hon. J. W. LOWTHER, Suffolk, with very good fruits of The Queen, Warner's King and other varieties. The 2nd prize was won by Sir MONTAGU TURNER, Havering, Essex. For Pears, the 1st prize was awarded to C. H. BERNERS, Esq., Ipswich, his fruits of Charles Ernest and Doyenné du Comice being specially good. The Rt. Hon. J. W. LOWTHER obtained the 2nd prize.

North Midland Counties.—Only one was to be found to send an exhibit of Apples for this class and only two of Pears. The one exhibit of Apples was that of Mr. N. TAYLOR, Grins-hill, Shrewsbury, whose fruits were of good quality, and to whom the 1st prize was awarded. He was also awarded the 2nd prize for Pears, the 1st prize being gained by the Duke of PORTLAND, Welbeck Abbey, Worksop (gr. Mr. J. Gibson).

Worcester, Hereford, Monmouth and Wales.—There was only one exhibit of Apples, that of Mr. C. CROOKS, Droitwich. His fruits were of a high order of merit, and the 1st prize was awarded. This gentleman also won the 1st prize for Pears, the 2nd being awarded to the only other exhibitor, Mr. S. TAWLING, Old Coach Road, Wilton, Droitwich.

Scotland.—There was only one exhibit of Apples and none of Pears. The Apples were sent by Captain GORDON, Threave House, Castle Douglas (gr. Mr. James Duff). The fruits of Worcester Pearmain were especially well grown and of good colour, and the 1st prize was awarded.

Ireland.—Ireland was represented by only one exhibit of Pears and two of Apples. On the whole the exhibits were very meritorious, and the Apples shown by the Earl of BESSBOROUGH, Piltown, Kilkenny, were fully deserving of the 1st prize which was awarded. The same competitor sent the only exhibit of Pears and won the 1st prize.

AFFILIATED SOCIETIES.

Two societies competed for the Challenge Cup offered for competition by societies affiliated to the R.H.S. The schedule called for six dishes each of culinary Apples, dessert Apples and

dessert Pears, six varieties to each dish, all distinct. The Cup was won by the Colchester and District Gardeners' Association, who showed a very good collection. Apples Lane's Prince Albert, Peasgood's Nonesuch, and Mère de Ménage were large and well coloured, while among Pears Pitmaston Duchess and Doyenné du Comice were noticeable. The 2nd prize exhibit, for which a Silver-gilt Banksian Medal was awarded, was shown by the Ipswich and District Gardeners' Association. A number of the dishes contained creditable fruits; especially good were Apples Warner's King, The Queen and James Grieve. Pears Sonvenir du Congrès were large, but not very shapely; there were, however, good fruits of Marguerite Marillat and Durondeau.

DIVISION VI.

SINGLE DISH CLASSES. DESSERT APPLES.

Adams' Pearmain.—There were five entries in this class, the 1st prize being awarded to F. J. B. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset (gr. T. Turton), for well-coloured specimens. *Allington Pippin*.—This class was keenly contested. 11 competitors having sent exhibits, nearly all of a high order of merit. The 1st prize was awarded to Major ST. MAUR, Newton Abbot (gr. Mr. G. F. Richardson). *American Mother*.—Six exhibits of varying quality were staged, the best being that of F. J. B. WINGFIELD DIGBY, Esq., to whom the 1st prize was awarded. *Barnack Beauty*.—Very few exhibits of this variety were entered; fruits of good colour and form exhibited by the Earl of Bessborough, Piltown, Co. Kilkenny (gr. Mr. T. E. Tomalin), were awarded the 1st prize. *Belle de Boskoop*.—There were only three exhibits of this variety, but the collection of Mr. J. A. STEDSTON, Bishopsteignton, merited the 1st prize which was awarded. *Ben's Red*.—Five more or less creditable dishes of this variety were shown, the 1st prize being gained by Mr. C. R. BROAD, Aghem Conna, Co. Cork, for fruits of good colour and form. *Blenheim Pippin*.—This favourite variety was represented by ten exhibits. The 1st prize was awarded to Mr. THOS. SMITH, Coombe Court Gardens, Kingston Hill. *Charles Ross*.—There were no fewer than 14 exhibits of this variety, many of them of meritorious quality. The 1st prize was awarded to Sir JAMES HORLICK, Bart., West Dean Park, Chichester (gr. Mr. W. H. Smith), who showed six very good specimens. *Christmas Pearmain*.—This variety was represented by only four exhibits of varying quality. The 1st prize was awarded to ISAAC LEWIS, Esq., Bedgebury Park, Goudhurst (gr. Mr. J. R. Smith). *Claygate Pearmain*.—Four dishes of this variety were staged, the 1st prize being awarded to F. J. B. WINGFIELD DIGBY, Esq. *Cockle's Pippin*.—The exhibits in this class displayed very fair qualities, but competition was not keen. The 1st prize was won by C. H. COMBE, Esq., Cobham Park, Surrey (gr. Mr. A. Tidy). *Coronation*.—There were six entries for this variety, most of which were well grown and fully coloured. The best dish was that shown by Sir JAS. HORLICK, Bt., to whom the 1st prize was awarded. *Cox's Orange Pippin*.—As is to be expected, there was a very large entry for this favourite variety, the quality varying very much. The 1st prize was awarded to Mr. J. A. STRIDSTON, who showed well-grown fruits, but they were not very highly coloured. *Duke of Devonshire*.—Only four competitors sent dishes of this variety. The 1st prize was awarded to W. A. VOSS, Esq., Rayleigh, Essex, his fruits being well formed and of a rich, clear colour. *Egremont Russet*.—In this variety there were only two entries, the better being that of T. O'DONNELL, Esq., Tinakelly, Piltown, Co. Kilkenny, who was awarded the 1st prize. *Ellison's Orange*.—Only one dish of this variety was staged, by Viscount ENFIELD, Wrotham Park, Barnet (gr. Mr. H. Markham). The exhibit was considered sufficiently good to merit the 1st prize. *Houblon*.—Three dishes of this variety were shown, most of the fruits displaying good points. The 1st prize was gained by E. E. PEARSON, Esq., Brickendonbury (gr. Mr. W. Stephenson), with a very even dish of well-coloured fruits. *Jas. Grieve*.—This variety

was represented by seven entries, the 1st prize being awarded to the Right Hon. J. W. LOWTHER, Campsea Ashé, Suffolk (gr. Mr. A. Andrews). His fruits were well grown and of good colour. *King of Tompkins County*.—Three dishes of this variety were staged, the 1st prize being gained by the Earl of Bessborough. *Lord Hindlip*.—There were four exhibits of this variety. Many of the fruits shown were very uneven in size, but the 1st prize Apples shown by the Earl of Bessborough were uniform and of good colour. *Mannington's Pearmain*.—Only two exhibits of this variety were staged. The 1st prize dish of pleasingly-shaped fruits was shown by BASIL E. RICHARDSON, Esq., Stansted Abbots, Ware (gr. Mr. E. Coleman). *Margil*.—There were four exhibits of this variety, the 1st prize collection of small but well-finished fruits being that of Mr. R. STAWARD, The Gardens, Panshanger. *Reinette du Canada*.—This variety was represented by three good dishes, the 1st prize being awarded to Mr. T. SMITH, Coombe Court Gardens, Kingston Hill. *Ribston Pippin*.—There were eight entries of this favourite variety, the exhibits differing widely in colour and general appearance. The largest fruits are not necessarily the best for dessert purposes, but quality is the chief consideration. The 1st prize was



THE LATE BENJAMIN CAMPBELL.

awarded to the Duke of Newcastle, Clumber, Worksop (gr. Mr. S. Barker), for even and well-coloured fruits. *Rival*.—Competition in this variety was keen, and many of the fruits exhibited were of first-class quality. The 1st prize was awarded to E. E. PEARSON, Esq. *Scarlet Nonpareil*.—Only two dishes of this variety were exhibited, the 1st prize being awarded to Mr. A. SMITH, The Convent, Roehampton. *St. Edmund's Pippin*.—Most of the fruits comprised in the five exhibits of this variety were of good quality. The 1st prize was awarded to J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr. Mr. C. Page), for a particularly meritorious exhibit. *St. Everard*.—The same exhibitor also won the 1st prize for this variety, but his was the only dish. *Wealthy*.—There were several fine dishes of this Apple, most of them of rich red colour. The 1st prize was awarded to the Earl of Bessborough. *William Crump*.—There were four exhibits of this variety, but the standard of culture was not particularly high. The 1st prize dish was that of Earl BEAUCHAMP, Madresfield Court, Malvern (gr. Mr. W. Crump). *Eight Fruits of Any Other Variety Fit for Use*.—There was a large entry for this class, and competition was very keen, many of the fruits being of excellent quality. The 1st prize was won by F. J. B. WINGFIELD DIGBY, Esq., for the variety Jefferson. *Eight Fruits of Any Late Variety*.—Not quite so many exhibits of later varieties were staged, but several of the dishes contained very creditable fruits. The winner of the 1st prize was BASIL E. RICHARDSON, Esq., who showed fine fruits of Brownlee's Russet.

(To be continued.)

CONFERENCE OF R.H.S. AFFILIATED SOCIETIES.

OCTOBER 6.—The annual meeting of the delegates of the societies affiliated with the Royal Horticultural Society was held on the 6th inst. at Vincent Square, at 3 o'clock. The chair was taken by Dr. Keeble, and there was a good attendance of delegates.

The chairman opened the proceedings with a brief résumé of the work done by the society to aid affiliated societies in their work of cultivating local interest in horticulture. He spoke of the successful establishment of the National Diploma in Horticulture, and of the prospect of the institution of a degree in horticultural science. The chairman urged the claims of the Allies War Relief Committee upon the delegates, and drew attention to the fact that seven new publications on different aspects of cottage and allotment gardens had been published during the year by the society.

Mr. P. Jay, St. Barnabas Horticultural Society, Sutton, proposed that affiliated societies should join in a Potato-growing competition, and outlined the steps which had been taken by his society to make such competitions in Sutton popular and successful. He drew attention to the fact that by this means the yield of Potatoes had been very considerably increased.

Mr. J. Gregory, Croydon Horticultural Society, urged that quality was of no less importance than quantity, and insisted that the former aspect must not be lost sight of in any competition of the kind suggested.

A valuable paper was read by Mr. Cyril Harding, the Heart of London Garden Society, drawing attention to the efforts which are being made in great towns to encourage the cultivation of flowers and other plants. He suggested that a committee should be brought together consisting of those who have charge of this important branch of gardening, and that the object of the committee should be to co-operate with the object of extending and perfecting gardening in the great centres of industry.

The chairman promised to bring the subject before the Council, and assured the conference that the subject would have the hearty support of that body.

Mr. E. C. CROSS, Hale End Horticultural Society, described the steps which had been taken by his society to give effect to the recommendation of the Council with respect to the cultivation of waste land. He recounted the means which had been adopted to secure suitable land, and mentioned that, starting with six plots, the society had now secured no fewer than fifty.

The chairman addressed the conference on the urgent importance of extending the cultivation of vegetables in all suitable vacant land. He described the steps which were taken by the Council of the society immediately on the outbreak of war to encourage the planting of vegetables, and after showing the large measure of success which attended the effort, urged the members attending the conference to do all in their power by local initiative to increase the area under horticultural cultivation.

Mr. Wilks and other speakers informed the conference of the work in this direction which had been carried out in Croydon.

After the formal business of the conference was concluded, Mr. Wilks described a number of new lantern slides prepared for lecture purposes illustrating his own garden, The Wilderness, Shirley, and the gardens of Sir Edmund Under, Leonardslea, and of Sir Harry Veitch, East Burnham Park, Slough.

DEBATING SOCIETIES.

CHELMSFORD AND DISTRICT GARDENERS'.

The annual meeting of this Association was held on Friday, the 24th ult. Mr. G. A. Goulson presided. The Hon. Secretary (Mr. W. H. Ripper) submitted the report and balance-sheet, both of which were considered satisfactory; the financial statement showed a balance in hand of £10 9s. 2d. Mr. E. H. Christy was re-elected president, Mr. W. H. Ripper hon. secretary, and Messrs. A. Hales and Mr. P. Gunner were elected as committeemen to fill vacancies. It was arranged to hold meetings monthly instead of fortnightly.

MARKETS.

COVENT GARDEN, October 6.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.s.d.	Michaelmas	s.d.s.d.
Arums, per doz.	4 0-4 6	Daisies, in variety, per doz. bunches	3 0-5 0
Carnations, per doz. blooms, best American varieties	1 6-2 6	— Cattleya ..	10 0-12 0
— smaller, per doz. bunches	12 0-15 0	— Harrisonia ..	4 0-5 0
— Carola (crimson), extra large	3 0-3 6	— Cyprinidium ..	1 6-2 6
— Malmaison, per dozen blooms	—	— Odontoglossum crispum	3 0-4 0
— pink	6 0-9 0	Pancratium, per doz. blooms	2 0-2 6
Chrysanthemums, white, per doz. blooms	1 6-3 0	Pelargonium, per doz. bunches, double scarlet	4 0-6 0
— Yellow, per doz. blooms	1 6-2 6	— white, per doz. bunches	4 0-5 0
— Bronze, per doz. blooms	1 0-1 6	Physalis, per doz. bunches	5 0-6 0
— Pink, per doz. blooms	1 0-2 0	Roses, per dozen	—
— White, per doz. bunches	4 0-5 0	— blooms, Bride	1 0-1 6
— Brouze, per doz. bunches	3 0-4 0	— Duchess of Wellington ..	—
— Pink, per doz. bunches	3 0-5 0	— Lady Hillingdon ..	1 0-1 6
— Yellow, per doz. bunches	3 0-4 0	— Liberty ..	1 0-1 6
Eucharis, per doz.	2 0-2 6	— Madame A. Chateau ..	1 0-2 0
Gardenias, per box of 15 and 18 blooms	1 6-2 6	— Melody ..	1 0-2 0
Gladioli, Brechlyensis, per doz. spikes	2 0-2 6	— Mrs. Russell ..	1 0-1 6
Lapageria, per doz. blooms	2 0-2 6	— Mr. Maryland ..	1 0-1 6
Lilium longiflorum, per doz. long	3 0-4 0	— Niphotos ..	1 0-1 6
— short	4 0-—	— Prince de Bulgarie ..	1 0-2 0
— lancifolium, album, long	2 0-2 6	— Richmond ..	1 0-1 6
— short	1 6-2 6	— Sunburst ..	1 6-2 0
— lancifolium, rubrum, per doz. long	1 3-1 6	— White Crawford ..	1 0-2 0
— short	0 9-1 0	Scabiosa caucasica (mauve), per doz. bun.	2 0-2 6
Lily-of-the-Valley, per dozen bunches	21 0-24 0	Spiraea, white, per doz. bun.	—
— extra special	15 0-18 0	Statice, mauve, per doz. bun.	3 0-4 0
— special	15 0-18 0	— white and yellow, per doz. bunches	3 0-4 0
— ordinary	15 0-18 0	Stephanotis, per 72 pips	2 6-3 0
Marguerites, yellow, per doz. bunches	1 6-2 0	Stock, double white, per doz. bunches	3 0-4 0
		Tuberose, per packet of 24 blooms	0 8-10 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Adiantum Fern (Maidenhair) best, per doz. bunches ..	4 0-5 0	Fern, French, per doz. bunches ..	6 6-0 8
Agrostis (Fairy Grass), per doz. bunches	2 0-4 0	— common ..	3 0-4 0
Asparagus plu- mosus, long trails, per half dozen ..	1 6-2 0	Galax leaves, green, per doz. bunches ..	2 0 —
— medium, doz. bunches ..	12 0-18 0	Grasses, various, per doz. bun.	1 6-2 6
— Sprengeri ..	6 0-12 0	Hardy foliage, various, per doz. bun. ..	4 0-8 0
Berberis, per doz. bun. ..	4 0-5 0	Honesty, per doz. bunches ..	12 0-15 0
Carnation foliage, doz. bunches	3 0-5 0	Licheu Moss, per doz. boxes ..	12 0 —
Croton foliage, doz. bunches	12 0-15 0	Moss, gross bunches ..	5 0-6 0
Cycas leaves, per doz. . . .	—	Myrtle, doz. bun. English, small-leaved	6 0 —
Eulalia japonica, per bunch ..	1 0-1 6	— French, per doz. bunches	1 0-1 3
		Peruetia, per doz. bunches	6 0-8 0
		Smilax, per bun. of 6 trails ..	1 3-1 6

REMARKS.—The majority of the flowers now obtainable are those grown out of doors, which are offered at cheap prices. Blooms grown indoors are not so plentiful, and prices realised are higher, especially for choice white flowers. The prices for Liliums still fluctuate, and Lilium longiflorum has again realised high figures. Richardias (Arums) and Carnations are scarce. The following varieties of Roses are obtainable in excellent condition: Madame Abel Chateau, Liberty, Richmond, Melody, Maryland, Lady Hillingdon, White Crawford, Niphotos, Mrs. Russell, Sunburst and Prince de Bulgarie. Violets, of the variety Princess of Wales, are arriving in much better condition; the weather being cooler they travel better. The smaller varieties, however, are more reliable, and maintain their freshness better.

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

	s.d.s.d.	Asparagus plumosus, per doz.	s.d.s.d.
Aralia Sieboldii, dozen	4 0-6 0	— per doz.	10 0-12 0
Araucaria excelsa, per doz.	18 0-21 0	— Sprengeri ..	6 0-8 0

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

	s.d. s.d.		s.d. s.d.
Aspidistra, per doz., green ..	18 0-30 0	Fern, in 32's, per doz.	10 0-18 0
— variegated ..	30 0-60 0	Ficus repens, 48's, per doz.	4 6-5 0
Bouvardia, 48's, per doz.	5 0-6 0	— 60's, per doz.	3 0-3 6
Cacti, various, per tray of 15's ..	4 0 —	Geonoma gracilis, 60's, per doz.	6 0-8 0
— tray of 12's ..	5 0 —	— larger, each ..	2 6-7 6
Chrysanthemums, in 48's, per doz.	6 0-10 0	Grevillea, 48's, per doz.	5 0-6 0
Cocos, Weddelliana, 48's, per doz.	18 0-30 0	Kentia Belmoreana, per doz.	5 0-8 0
— 60's, per doz.	8 0-12 0	— Forsteriana, 60's, per doz.	4 0-8 0
Croton, per doz.	18 0-30 0	— larger, per doz.	18 0-36 0
Cyclamen, per doz.	10 0-12 0	Latania borbonica, per doz.	12 0-30 0
Dracaena, green, per doz.	10 0-12 0	Lilium longiflorum, per doz.	30 0-36 0
Ericas, white, 48's, per doz.	12 0-18 0	Marguerites, in 48's, per doz.	6 0-8 0
— pink, 48's, per doz.	12 0-15 0	— white ..	6 0-8 0
— thumbs, per doz.	3 6-5 0	Pandanus Veitchii, per doz.	36 0-48 0
Ferns, in thumbs, per 100 ..	8 0-12 0	Phoenix rupicola, each ..	12 6-21 0
Fern, in small and large 60's	12 0-20 0	Solanum, 48's, per doz.	9 0-10 0
— in 48's, per doz.	5 0-6 0	Spiraea, white, per doz.	8 0-10 0
— choicer sorts, per doz.	8 0-12 0	— pink, per doz.	8 0-10 0

REMARKS.—Cyclamen are the latest additions to the plant market. Other flowering plants, which are arriving in good condition, are Chrysanthemums, Ericas, white and pink Solanum, and white and pink Spiraea. Amongst foliage plants, Palms and Aspidistras are scarce. Business in this department has improved.

Fruit: Average Wholesale Prices.

	s.d.s.d.	Apples—	s.d.s.d.
— Californian, per box	9 6-10 6	— English cooking, per bus.	3 0-4 0
— Dessert, per ½ bus.	1 6-3 0	Bananas, bunch—	
— Medium ..	7 6-—	— X-medium ..	8 6-—
— Extra ..	9 6-—	— Double X ..	10 6-12 0
— Giant ..	14 6-—	— Red, per ton	£18 0-—
— Jamaica, per ton	£13-£14	Blackberries, per peck	2 6-—
Cobnuts, per lb.	0 5-0 6	Damsons, p. bus.	3 0-4 6
Grape Fruit, per case	21 0-24 0	Grapes, English, black, per lb.	0 4-1 6

REMARKS.—The market continues to be well supplied with Apples of all seasons varieties. The first shipments of Californian Newtown Pippins have arrived this week in excellent condition, and consignments from Nova Scotia are expected to arrive shortly. Of Pears, the following varieties are available: Beurré Hardy, Doyenné du Comice, Pitmaston Duchess, Calabash and Conference. Plums of the varieties President, Prune and Bush are available. Damsons are still moderately plentiful, and the supplies of Sloes and Blackberries have increased. French and English Walnuts are becoming more plentiful, but Cobnuts are scarcer and dearer. Large quantities of Grapes are arriving daily. Peaches, Nectarines and Figs are nearly over. E. H. R., Covent Garden, October 6, 1915.

Vegetables: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Artichokes, Globe, per doz. . .	2 0-4 0	Mushrooms, outdoor, per lb. . .	6 6-0 8
Asparagus, Paris green . . .	—	— Buttons . . .	1 6-2 0
Aubergines, per doz. . .	2 0-2 6	Mustard and Cress, per doz. . .	0 10-1 0
Beetroot, per bus. . .	2 0-2 6	Onions, per cwt. . .	—
Brussel Sprouts, per ½ bus. . .	3 0-3 6	— English . . .	9 0 —
Cabbage, per tally . . .	4 6-7 0	— green, per doz. . .	—
— Red, per doz. . .	2 6 —	— bun. . .	4 0 —
Carrots, per doz. . .	2 6 —	— Valencia, per doz. . .	10 0-11 0
Cauliflowers, per tally . . .	5 6-10 6	— English, per bus. . .	4 6 —
Celery . . .	12 0-18 0	Farnsips, per bus. . .	2 6-3 6
Corn cobs, per doz. . .	1 6-2 0	Pears, per bus. . .	7 6-8 0
Cucumbers, per doz. . .	1 6-4 0	Radishes, per doz. bun. . .	1 6 —
French Beans, per lb. . .	0 6-0 8	Scarlet Runners, per bus. . .	2 0 —
Garlic, per lb. . .	0 10-1 0	Shallots, per ½ sieve . . .	4 6 —
Herbs, per doz. bun. . .	2 0-6 0	Spinach, per bus. . .	1 6-2 0
Leeks, per doz. . .	2 0-2 6	Tomatos, English, per doz. . .	4 6-5 6
Lettuce, Cabbage and Cos, per doz. . .	1 6-3 0	Turnips, per bag . . .	2 6 —
Mulberries, per doz. bun. . .	—	Vegetable Marrows, per tally . . .	6 0 —
Mushrooms, cultivated, per lb. . .	1 6-2 0	Watercress, per doz. . .	0 5 —

REMARKS.—Tomatoes and Cucumbers are not so plentiful as they have been. Vegetables generally have been rather scarce during the week, and a fair volume of trade has been maintained. E. H. R., Covent Garden, October 6, 1915.

New Potatoes.

	s.d.	s.d.		s.d.	s.d.
Bedford—			Kent—Continued,		
Epicure ..	3 9-4 0		Sharpe's Ex-		
Eclipse ..	4 0-4 6		press ..	4 3-4 6	
Blackland ..	3 6-4 0		Lincoln—		
Kent—			Queen ..	4 0-4 6	
Puritan ..	4 0-4 6		Epicure ..	3 9-4 0	
Eclipse ..	4 0-4 6		Eclipse ..	4 0-4 6	
			King Edward ..	4 0-4 6	

REMARKS.—Trade is better, and consignments from growers are large. Prices have advanced during the past week. Edward J. Newborn, Covent Garden and St. Pancras, October 6, 1915.

Obituary.

C. F. BALL.—It is with great regret that we announce the death of Mr. C. F. Ball, editor of *Irish Gardening* and assistant keeper of the Royal Botanical Gardens, Glasnevin. On the outbreak of war Mr. Ball volunteered for service, and joined the D ("Pals") Company of the 7th Royal Dublin Fusiliers, and he was killed in the recent fighting in the Dardanelles. Mr. Ball was a keen gardener, with an exceptionally sound knowledge of plants. He was interested particularly in Alpine plants. A few years ago Mr. Ball explored the flora of Bulgaria, and related his experiences in *Gard. Chron.*, April 20, 27, 1912, pp. 252, 274. Other articles from his pen have appeared in these pages from time to time, and many of his descriptions of rare and interesting plants were accompanied by illustrations from his photographs. Quite recently the collection at the Royal Botanic Gardens, Glasnevin, was enriched by a consignment of plants, which he sent home from the Dardanelles to Sir Frederick Moore. Mr. Ball was married so recently as December last, and readers will join with us in offering the deepest sympathy to his wife. During the exacting duties of campaigning Mr. Ball found time to botanise, and his letters to Sir Frederick Moore, extracts from which are published in *Irish Gardening*, show a remarkable power of observation and accurate yet picturesque description. Mr. Ball's work for horticulture, both in connection with *Irish Gardening* and with the Gardens at Glasnevin, will be long remembered, and all who knew him and his work deplore the loss of one so full of promise and so capable of high achievement.

BENJAMIN CAMPBELL.—We learn with regret the news of the death of Mr. Benjamin Campbell, at "Bellevue," Wick, Caithness, Scotland. Mr. Campbell was one of the old school of Scottish gardeners and had attained the ripe age of eighty years. He served his apprenticeship in gardening at Barrogill Castle, the historical seat of the former Earls of Caithness, and subsequently gained experience in Haddingtonshire. He formed and laid out the new gardens at Skelpick House, Farr, Sutherlandshire, and whilst there Major Houston, of Kintradwell, Brora, was so impressed with Mr. Campbell's work that he engaged him as gardener at Kintradwell, a position he held for close on twenty years. In those days the gardens at Kintradwell were the most noted in the district and a reflex of the originality and capability of Mr. Campbell as a horticulturist. He was a man of genial, kindly nature, ready to impart the benefit of his experience to the young men under him, and his self-denial and Celtic enthusiasm will be long cherished by a wide circle of friends. His eldest son, Mr. Ben Campbell, is gardener at Cornbury Park, Oxfordshire, and another son, Mr. D. B. Campbell, is engaged with the firm of Messrs. Thomas Rochford and Sons, Ltd.

THOMAS RUTHERFORD.—The death occurred at Durham on Wednesday, the 29th ult., at the age of eighty, of Mr. Thomas Rutherford, gardener for more than twenty-five years at Leazes Lodge. The deceased, who had lived in retirement for the past thirteen years, was a native of Northumberland. Many years ago he carried on a nursery business at Durham with the late Mr. Earl, subsequently engaging as gardener to Mr. Henderson at Leazes Lodge. He leaves two sons.

ANSWERS TO CORRESPONDENTS.

"There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self."—*Gardeners' Chronicle*, No. 1, Vol. I., January 2, 1844

ALKANET ROOT: *A. Jolley*. The source of this root is given in *Woodvilles' Medicinal Plants* (third edition), Vol. II., p. 315, pl. 106, as *Anchusa tinctoria*, but the illustration attached to the description is that of *Anchusa officinalis*, Linn. The author remarks that "In this climate the roots never acquire the deep (purplish-red) colour on which its utility depends." Mr. E. M. Holmes, who is the only person who has grown Alkanet root in this country, informs us:—"I have always found *Anchusa officinalis* grown in botanical gardens, instead of *Anchusa tinctoria*, and for several years tried in vain to obtain seeds of the latter, so as to verify the statement concerning that plant as the source of Alkanet root, which I doubted. Through the kindness of the late Prof. L. Planchon, of Montpellier (who died this month), I was able in 1897 to obtain several roots of *Anchusa tinctoria*, now referred to as *Alkanna tinctoria*, Tausch., and found it to be very different from *A. officinalis*, having no scales in the throat, and with beautiful ultramarine blue-coloured flowers. It possessed a purplish-red root and retained the colour in cultivation. The plant grew and flowered readily in a greenhouse, but specimens grown in the open ground proved that it was only half-hardy, succumbing to the severer frosts in winter." There would be little chance of growing Alkanet in this country except in mild districts like those of Sidmouth or Salcombe; Tenby, in South Wales; below Bodmin, in Cornwall; or in the Isle of Wight. Near Montpellier the plant grows in sandy fields amongst grass, fully exposed to the sun, the sandy soil probably containing calcareous matter derived from land shells. Probably seed could be obtained from the Botanical Gardens at Montpellier, but it is doubtful if it would pay to cultivate the plant in this country, since the price at present paid for the dried root is less than 1s. a pound, which is equal to about 3d. a pound for the fresh root, as it loses three-quarters of its weight in drying. Several other Boraginaceous plants belonging to the genera *Arnebia*, *Lithospermum*, *Macrotomia* and *Onosma* yield roots giving a similar dye and are used in different countries. An illustration of *Alkanna tinctoria* and a list of the plants yielding similar roots containing purplish colouring matter are given in the *Pharmaceutical Journal*, Third Series, Vol. V., p. 61 (1897).

CEDRUS ATLANTICA: *A. C. Cheshire*. The tree of *Cedrus atlantica* may be transplanted as soon as the young growth is ripe, which, in your locality, it probably is. Lift the roots with plenty of soil, and water them freely as soon as the tree is in its new position. Stake and tie the plant securely. As the tree has only been planted three years, it should lift with a good ball of soil.

CELERY DISEASE: *D. R.* The Celery is injured by the fungus *Septoria petroselinii*—Celery leaf spot. Next season spray the plants with liver of sulphur when the leaves are young. The disease is not transmitted with the seed.

CLOVER ON LAWNS: *A. C. Cheshire*. Clover is somewhat difficult to eradicate from a lawn once the plant has obtained a good foothold, and on the extent it has spread depends the best means of getting rid of it. Patches should be dug out, and the site resown with grass seed. If the intruder spreads throughout the lawn dress the turf with sulphate

of ammonia at the rate of 2 oz. to the square yard, repeating the dressing after an interval of six weeks. The manure will promote the growth of the grass, and check the Clover. To eradicate weeds from a lawn is always a troublesome matter, and one that calls for much time and patience.

INSTRUCTORSHIP IN HORTICULTURE: *Everton*.

(1) As you appear to have specialised in flower gardening you must obtain experience in vegetable and fruit growing, for the cultivation of vegetables and fruits are two branches of horticulture most generally dealt with by county council lecturers. (2) Experience at a college of horticulture is helpful, but not essential. (3) Yes, fruits and vegetables are cultivated at the John Innes Horticultural Institute. (4) The National Diploma in Horticulture would doubtless be of great value to you in obtaining a position as horticultural instructor, and you would be well advised to make every effort to secure it. You must remember that the openings for horticultural lecturers are few, and there are, as a rule, many good candidates in the field.

NAMES OF FRUITS: *C. C., Worcester*.

1, Belle de Boskoop; 2, Fearn's Pippin; 3, not recognised; 4, Hambledon Deux Ans; 5, Tower of Glammis; 6, Melon Apple.—*Constant Reader*. 1, Worcester Pearmain; 2, Domino; 3, Lane's Prince Albert.—*A Constant Reader*. 1, Lane's Prince Albert; 2, 4 and 5, very small and not recognised; 3, Worcester Pearmain; 6, Golden Noble.—*Graham*, Aston Town.—*Ben Ashton*, White Westling.—*W. Lane*. The Pears are not fully developed. We think they are a stewing variety. Do not gather them for at least another fortnight, and then send further specimens.—*A. F.* 1, 2, 6 and 7, Williams's Bon Chrétien; 3, Flemish Beauty; 4, Souvenir du Congrès; 5, Fondante de Cnerne; 8 and 9, Pitmaston Duchess; 10, Beurré Bosc; 11 and 25, Louise Bonne of Jersey; 12, Comte de Lamy; 13, British Queen; 14, Beurré Bachelier; 15 and 16, Beurré Sterckmans; 16, Iris Gregoire; 17, Marguerite Marillat; 19, Conference; 20 and 24, Beurré Diel; 21, Marie Benoist; 22, Beurré Clairgeau; 23, Monarch (syn. Knight's Monarch).—*A. J. L.* 1, Domino; 2, Lord Derby; 3, Vicar of Winkfield; 4, Beurré Diel.—*W. W. T.* Small's Admirable.—*Subscriber*. It is impossible to name such immature and shrivelled fruits.—*R. Phillips*.

1, Queen Caroline; 2, Potts's Seedling; 3, Cox's Pomona; 4, Decayed; 5, Pitmaston Duchess; 6, Fondante d'Automne.—*Ed. Lant*. 1, Potts's Seedling; 2, Tom Putt; 3, Withington Fillbasket; 4, Allington Pippin; 5, Ribston Pippin; 6, Peasgood's Nonesuch; 7, Lane's Prince Albert; 8, Gascoyne's Scarlet; 9, Winter Nellis; 10, Durondeau; 11, Souvenir du Congrès; 12, Beurré d'Amanlis; 13, Joséphine de Malines.—*Mrs. Brierley*. Louise Bonne of Jersey.—*T. H. C.* 1, The fruit was deformed; 2, Early Wax; 3, Allington Pippin; 4, Duchess of Oldenburg; 5, Prince Bismarck; 6, Nancy Jackson.—*C. C. Worcester*. The Pear was overripe and was crushed in transit.—*E. Johnson*. 1, Cellini; 2, Ribston Pippin; 3, New Hawthornden; 4, Blenheim Pippin; 5, Baldwin; 6, Manks Codlin; 7, Alfriston; 8, Warner's King; 9, White Westling; 10, King of the Pippins; 11, Northern Greening.—*W. C.* Apple Rival; Pear Le Lectier.—*J. E. H.* 1, Lane's Prince Albert; 2, Manks Codlin; 3, Kentish Pippin (syn. Colonel Vaughan's).

NAMES OF PLANTS: *Kersey*. 1, *Veronica speciosa* var. *alba*; 2, *Sedum spectabile*; 3, *Centranthus ruber*; 4, *Veronica* (send in flower).—*G. H. and Sons*. 1, *Filago germanica*; 2, *Gnaphalium sylvaticum*; 3, *G. uliginosum*.—*E. J.* *Zauschneria californica*.—*H. D.* 1, *Cupressus pisifera* var. *aurea*; 2, *Abies nordmanniana*; 4, *Leycesteria forasosa*; 5, *Pieris floribunda*; 6, *Myrica cerifera*.—*F. H. Bowler*. *Crataegus coccinea*.—*R. P. E.* 1, *Vitis inconstans* var.; 2, *Ligustrum coriaceum*; 3, *Hypericum proflificum*.—*E. F.* Specimen too badly crushed

for identification.—*A. J. B., Surrey*. 1, *Skimmia japonica*; 2, *Veronica Andersonii*, garden variety; 3, *Cassinia filvida*; 4, *Veronica salicifolia*; 5, *Veronica Traversii*; 6, Send when in flower; 7, *Veronica ovata*.—*W. T. and Co.* 1, *Liatris spicata*; 2, *Polygonum baldschuanicum*; 3, Not recognised. Send perfect specimen.—*R. W.* *Schizostylis coccinea*.—*P. G.* 1, *Phytolacca decandra*; 2, *Ruellia macrantha*; 3, *Hibiscus syriacus*, known also as *Althaea frutex*.

PLUMS: *F. W. S., Herts*. The Plums were received in a state of pulp, and therefore we are unable to identify the variety. Send further specimens in a less ripe condition.

PRIVET HEDGE: *Cheshire*. Next April is the best time to cut back the Privet hedge, just as growth is commencing. If the weather is dry at the time, soak the roots with water.

PRUNING A LAUREL HEDGE: *J. T.* Cut the Laurel hedge back 3 feet or 4 feet next March just before growth commences, and trim the sides if the hedge is wide, at the same time. The large gaps at the base should be made good by a few young plants, which may be set after the pruning is finished. You will probably find that the hedge will grow strong at the top, and must be checked by topping the strongest shoots until the base is properly furnished. Evergreen hedges more than 6 feet in height should always be narrower at the top than at the bottom, otherwise bare spaces may occur at the base.

RYEGRASS: *C.* Your Ryegrass is attacked by Grass rust—*Puccinia graminis*. Next spring when growth commences spray the grass with liver of sulphur, at the strength of 1 oz. in four gallons of water, and repeat the spraying at intervals of a week.

SCARLET RUNNERS FAILING TO SET: *Scarlet Itkley*. It is well known that in times of drought the Scarlet Runner Bean fails to set pods, and doubtless dry conditions at the roots are responsible for the failure of your plants.

STOCKS FOR ROSES: *T. J. J., Salop*. Most English nurserymen will supply stocks for Roses for their customers, on learning their requirements. If only small quantities are wanted it is generally less trouble to get them from the nurserymen with whom you are in the habit of dealing. If large quantities are desired insert an advertisement in the horticultural press.

THE DASHEEN: *W. H. A.* The Dasheen is the edible tuber of certain species of *Colocasias*, which are grown in some parts of tropical America as a substitute for Potatoes. The plants could only be grown in this country in very hot houses, so that they are not likely to be cultivated for their economic value here.

TO DESTROY APONOGETON DISTACHYON: *J. W. L.* This plant cannot be destroyed by spraying alone, but if allowed to reach its full growth it can easily be pulled up. If the operation is performed carefully the roots will be detached with the stem, and if this is done on two occasions you should be able to eradicate the plant from your pond.

WOODLICE: *W. E. K.* To eradicate this pest traps may be prepared by hollowing out pieces of Potato or Turnip and placing the pieces, hollow side downwards, in the haunts of the pest. If the baits be examined each morning it will generally be found that they contain woodlice, which should be destroyed and the baits replaced. The baits may be poisoned by soaking them in Paris green or white arsenic if desired.

Communications Received.—Lads—Dun—Enquirer—J. M.—E. F.—J. E. H.—W. C.—C. C.—Mrs. B.—T. H. C.—E. L.—D. R.—Ding M. H.—E. G. B.—J. R. J.—W. A. J.—J. C.—D. B. O.—E. M. H.—H. E.—F. J.—W. A.—E. C. New South Wales (Your letter has been forwarded to Mr. Barker)—S. and Sons—W. T.—J. W. R.—W. T.—J. H.—M. H.—Leeds—C. B.—N. D.—H. G. P.—A. W. G.—A. D. W.—W. G.—H. J. R.—D. C. G.—G. U. T.—R. P. B.—G. S.—R. A. W.—R. B.—D. M.—Experience—S. Mottet—J. C.—H. S. T.

THE Gardeners' Chronicle

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SIR JOHN HILL.

JOHN HILL, the son of a clergyman, was born in or about the year 1716, and died in 1775. He was an individual of great versatility, acute in business, and very successful in nearly all the undertakings to which he applied his energies. Bred an apothecary, he also engaged in the rôles of herbalist, actor, dramatist, journalist, doctor, gardener, poet, novelist, and finally that of a vendor of quack medicines. He wrote profusely, and works on agriculture, precious stones, fossils, botany, horticulture, medicine, and religion came jostling one another from his fertile pen. In one important matter, however, he failed—that of gaining and retaining the respect of his contemporaries, who nearly all treated him with unceasing contempt. Dr. Atall was one of the nicknames bestowed upon him, and he was for a long time the butt of epigrammatists and poetasters. The title affixed to his name was derived from an Order bestowed upon him by the King of Sweden, not long previous to his death, and he was generally known as Dr. Hill, having purchased a diploma in medicine from the University of St. Andrews. It is recorded that his writings alone supplied him for many years with an annual income of £1,500; yet the intrinsic value of his books and pamphlets, most of them written for instruction, is not great, and even in his lifetime they sank so low in public esteem that he was forced to try other means in order to obtain an income, which at last, fortunately for himself, he derived from a quack medicine, called the Tincture of Bardana, from the immense sales of which

he was enabled to keep a town and country house. This tincture, though a panacea, was specially adapted to mitigate or cure gout, the bane of drinkers of port. Hill himself was afflicted with gout, which finally cut him off, and the last of the clever squibs which had at once delighted the public of his day and ruffled his temper, appeared forthwith to this effect.

"Poor Doctor Hill is dead!" "Good lack. Of what disorder?" "An attack Of gout." "Indeed! I thought that he Had found a wondrous remedy." "Why, so he had, and when he tried, He found it true—the Doctor died!"

His earliest book on plants appeared in 1751, being the second volume of a work entitled *A General Natural History*. Three years later his *Useful Family Herbal*, which passed through several editions, appeared, to be followed in 1756 by the *British Herbal*, a large folio volume. Also in this year was completed *The Compleat Body of Husbandry*, another large folio, said to have been compiled from the papers of "Stephen Hales, Esq."—the learned author of *Vegetable Statics*. Other names appear on the title-page, but not that of Hill, though the letterpress is his. This, and the volume next to be mentioned, were issued in weekly parts at 6d., each part containing sixteen pages. This year also saw the commencement of *Eden, or a Compleat Body of Gardening*, just referred to, the year on the title-page being 1757. Each number was furnished with a full-page copper-plate engraving of the six or seven plants described. A portion of each number was also occupied with notes on the work necessary for the week in the flower, kitchen, and fruit gardens and seminary. From page 584 to the end is a series of articles on garden design, construction of greenhouses and stoves, forcing by means of hot dung laid against walls; raising double from single flowers; propagating; the production of variegated plants; the sleep of plants, etc. Throughout the book are cultural directions for the plants enumerated. An edition with coloured plates was also published, and later another edition supplemented with twelve additional plates. This, like the last, is attributed to Stephen Hales. It was not unusual for Hill to publish under a fictitious name. I possess other two small volumes of this character. One, *A Method of Raising Trees from the Leaves*, is professedly by Thomas Barnes, who is known to have been a gardener at Elsham, but the matter is entirely Hill's. This volume appeared in 1755, and again in 1758.

The other is a pamphlet of 58 pages, with the pretentious title of *The Practice of Gardening*, "explained to all capacities—By Thomas Perfect, Gardener, inventor of the Chinese Parterres." Perfect was really a gardener, but here again the writing is Hill's, and in spite of the lengthy and extravagantly puffed title, only the cultivation of flowers is briefly treated. 1759 is the date of this volume. *The Sleep of Plants*, in which experiments

are recorded with *Abrus precatorius*, *Mimosa sensitiva*, and other plants, showing that light, or its absence, rather, was a predisposing cause, was published in 1757, and a *Method of producing Double Flowers from Single* was elaborated in a volume in 1758. In the same year he gave a *Gardeners' Calendar* to the public, and in 1759 *The Vegetable System*, in royal folio, was commenced, and completed just previous to his decease. It extended to twenty-six volumes, the edition with coloured plates costing 130 guineas, and a few early volumes were published in quarto size. This was the work which obtained for its author the honour from the King of Sweden already noted. Hill published several botanical works in addition to those already mentioned, including *Exotic Botany*, in 1759, and *Flora Britannica*, in 1760. The latter work was superseded two years afterwards by the superior *Flora Anglica* of Hudson. Our author seems always to have maintained friendly relations with members of the aristocracy, and Lord Bute, King George's Prime Minister, was exceptionally friendly. Through his influence, Hill was appointed to the charge of the new Botanic Gardens at Kew, and during the period in which he held that position he published a catalogue of the plants in the gardens there, under the title of *Hortus Kewensis* (in 1768 and 1769). It is a single volume, octavo. Though he has followed Linnaeus in the nomenclature, the classification is his own "Methodo florali nova disposita," as he states in the title: trees and shrubs, in which are included Palms and Cycads, being unclassified. These are the chief products of his active brain relating to horticulture and allied subjects. R. P. Brotherston.

THE ROSARY.

PILLAR ROSES.

ROSES are much more effective trained up pillars 12 feet high than on pergolas, because most of the blooms develop on the top of a pergola, and are lost to view. So trained they are pleasing in many parts of the garden, and especially among dwarf shrubs, with a taller background which gives a green and pleasant foil to the rich colours of the flowers.

Grass offers a suitable site for Roses on pillars, and they are also effective amongst dwarf Roses. The important point is to arrange the pillars well apart so that each variety displays its growth and blossoms to the best advantage. Another important point is to select sorts that furnish the pillar from base to summit, and the varieties I enumerate below fulfil this requirement. Those that form two or three growths quickly and bloom mainly at the apex, becoming in after years bare at the base, should not be selected.

The following varieties will be found to be suitable for training on pillars, for they grow and flower with freedom whilst their colours are all desirable. Let the soil be deeply trenched and well manured, and plant early in November. Practise close pruning the first year, say to within 2 feet of the base of each plant, to in-

duce a vigorous growth at the start, even though it be at the expense of a flower crop.

Many growers fail with climbing Roses in allowing the young growths to become infested with aphids, which not only spoils the current season's flower crop, but cripples the growth.

SELECT LIST OF VARIETIES.—Paul's Scarlet Climber heads the list, for it is of a most gorgeous colour. Excelsa, commonly known as the crimson Dorothy Perkins, is one of the best varieties in growth, freedom of flowering and colouring. Coronation is also a good Rose, but the blooms are somewhat spoiled by a slight white stripe in some of the petals. Notwithstanding this defect it is a gorgeous, freely-flowering variety. The small, single blooms of Hiawatha are of a pleasing dark crimson shade, the tone being emphasised by the deep yellow anthers. American Pillar, another single variety of large size, bears enormous trusses of rose-pink blooms, each with a distinct white disc. Sodenia bears its scarlet carmine double flowers

its rampant growth makes it unsuitable for a pillar. Of pink shades I may enumerate Dorothy Dennison, a sport from Dorothy Perkins; Blush Rambler, with semi-double flowers, sometimes classed as a single, very free in growth, and producing huge trusses of sweetly-perfumed blush-pink blossoms; Evangeline, a single of much larger size than the last, the edge of the petals being deep pink. This is a deliciously fragrant late-flowering variety. Madame Alfred Carrière flowers early in the season, producing large clusters of big white tinted-blush flowers. The Dawson is one of the earliest varieties of all to open its rosy-pink blossoms, which it produces with great freedom. Amongst Roses of pink shades Mrs. F. W. Flight has large trusses of flowers; François Juranville, larger blooms of a salmon-pink shade of colour, and a more perpetual flowering habit than many; and Minnehaha, a deep rose-pink variety with panicles rather than trusses of blooms, which are developed widely

CAMPANULA ARVATICA.

THERE has been some confusion with respect to the name of *Campanula arvetica*. Its habitat is confined to that portion of the Cantabrian mountains in Northern Spain known as the Picos di Europa, and the plant was first found and recognised as a distinct species under the name of *C. arvetica* more than a century ago. The species appears to have been lost sight of afterwards until about thirty years ago, when it was rediscovered, and described afresh by Leresche and Sevier as *C. acutangula*. This latter name has been generally adopted in gardens, owing to name *C. arvetica* having been wrongly referred in *Index Kewensis* to a species of *Wahlenbergia*. The plant is figured in the *Botanical Magazine*, tab. 8,431, under its correct name. The stems are trailing, and bear large star-like flowers of a purplish-blue colour, whilst the leaves are small, round and toothed. *Campanula arvetica* is essentially a plant for the moraine, spreading by means of underground stems in the way of *C. Allionii*, and has proved quite hardy under this treatment. W. I.



FIG. 79.—*CAMPANULA ARVATICA*: FLOWERS PURPLISH-BLUE.

thickly in clusters, and when in bloom gives a splendid effect.

Suitable white-flowered varieties are somewhat scarce. The new Mrs. W. H. Walsh, of the Wichuraiana section, stands ahead of all others in purity of petal, and it is of good growth, possessing almost evergreen foliage.

The variety Neige d'avril is not generally known, but will be more extensively planted as its merits become recognised, for it flowers early in June. The semi-double blooms, borne in large clusters, are pure white with a centre of yellow stamens, and delightfully fragrant. Sweetheart is also of the Wichuraiana type; the flowers of this variety last longer on the plant than those of any other variety I know. The buds are pink, but the mature blooms are pure white.

François Guillot has pale yellow buds which develop to pure white. There are several belonging to the white Dorothy class, but as they are not purely white I ignore them. I leave out an old favourite, too, in *Félicité-et-Perpétue*—commonly known as the Seven Sisters—because

apart. Of yellows there is a dearth of good varieties. Claire Jacquier opens its flowers early; the petals are pankeen yellow and decidedly effective against the bronzy-tinted foliage. Gardenia also is somewhat of this character. The buds are deep yellow which fades to pure white. It has handsome deep green leaves, is the first to open, and continues in flower until November.

Other good Roses are Paul Transon, of rose colour, flushed with yellow at the base. Dorothy Perkins was one of the first varieties in the Wichuraiana section to become popular, and in consequence is probably more grown in gardens than any other variety. It possesses all the attributes of a perfect pillar Rose. The colour is rich pink. Lady Gay is of later introduction than the last: the colour being a rich cherry-pink. Sweet Lavender completes the list. The colour of this variety is bright mauve set off by a bunch of golden stamens in the centre. The colouring of this variety is so distinct and novel as quickly to attract attention. E. Molynx.

NOTICES OF BOOKS.

THE DAFFODIL YEAR BOOK.*

THE Royal Horticultural Society's *Daffodil Year Book* for 1915 contains 135 pages, of which the first 96 consist of general articles, the remainder being reports of shows and the Schedule of the R.H.S. Daffodil Show, 1916. Mr. Christopher Bourne contributes the first article on the season of 1915, and this is followed by three interesting chats or addresses by the late Mr. Peter Barr, which he appears to have delivered in Australia. In the course of these addresses he explained how he would endeavour to secure a red Trumpet Daffodil. He considered that with patience one might be produced having yellow, or perhaps white, petals. This might be done by using the pollen of C. J. Backhouse on Santa Maria, the most orange-yellow of Trumpet Daffodils, and then recrossing the progeny on Santa Maria, a process which might occupy twenty years.

Two short articles by Mr. J. C. F. Fryer, entomologist to the Board of Agriculture, tell us what is known of merodon, the Daffodil fly, and the new pest, eumerus, a similar but smaller fly, which appears to be even more destructive where it makes its appearance.

Of the numerous articles which follow, we may perhaps note the number of writers who deal with the smaller Daffodils, such as Calatinius and the Hoop Petticoats, and others which are found useful in the rock garden. These are contributed by Mr. F. Herbert Chapman, the Rev. W. Wilks, Mr. W. H. Divers, and Mr. Clarence Elliott. It is interesting to find so many writers devoting their attention to these small and very beautiful forms. The taste for them is undoubtedly growing among many gardeners, and is likely to prove a most satisfactory corrective of the search for mere size in the flower which is so sedulously followed by the exhibitor all the world over.

The Rev. Joseph Jacob furnishes us with a useful bibliography of the Daffodil, commencing with Haworth's Monograph, 1831, and going down to the *Daffodil Year Book*, 1914. The same writer also gives a description of 60 new or notable flowers, accompanied by their measurements on the system that he has so carefully elaborated.

An article, contributed by Mr. J. C. Alsop, on the annual increase of weight in Daffodil bulbs seems to point to the conclusion that the maximum increase is generally obtained by

* *The Daffodil Year Book*, 1915. Published under the direction of the Royal Horticultural Society. (London: Esley & Son.) Price 2s. 6d.

annual lifting and replanting. Many growers think that they get better results by leaving their bulbs two years in the ground, and this may perhaps be the case if only flowers are regarded, but as regards increase in total weight of the bulbs this is not so, the factor for increase in the case of bulbs left for two years being much less than double the factor for the first year in practically every case. This part of the volume closes with a number of short biographies, accompanied by portraits, of "Celebrities, Past and Present," beginning appropriately enough with a very pleasing picture of Miss Willmott. Friends of the late Rev. Stephen Eugene Bourne will be glad to have the little notice and portrait of the author of *The Daffodil Book*, if only as a reminiscence of his enthusiasm and the charm and kindness of his manner.

The *Year Book* has no index, and the table of contents at the beginning of the volume gives us the names or headings of the articles, but not the names of the writers. These are omissions which should be rectified in subsequent numbers.

The amount of space devoted to descriptions of shows and the names of successful exhibitors is less than in previous years, which is an improvement; but we fear that this reduction is largely owing to the fact that by reason of the war many shows were not held in 1915. We notice, however, that the list of Midland prize-winners is restricted to those who won the first and second prizes; surely this should be sufficient.

ORCHID NOTES AND CLEANINGS.

CYPRIPEDIUM SANDERIANUM.

THE obituary notices of the late Mr. Edwin Lonsdale in the American horticultural press state that Mr. Lonsdale found *Cypripedium Sanderianum* in a batch of *C. Lawrenceanum* and sold it to Messrs. Sander and Sons (see *Gard. Chron.*, p. 208). This Orchid was discovered by Förstermann when collecting for Messrs. Sander and Sons in the Malay Archipelago in 1885 or 1886, and was described by Reichenbach in *Gard. Chron.*, May, 1886, p. 554. The precise locality was never revealed, but some indication of the plant's habitat may be gleaned from the fact that the collector imagined that he had found *C. Stonei platytanum*, an abnormal variation of its species. Even now the precise locality where the plant grows wild is not known.

For some years *Cypripedium Sanderianum* was very rare, because Förstermann's collection was greatly reduced by accident of travel, and it seems to have escaped the notice which such a remarkably distinct species usually attracts, and was not illustrated in *Gard. Chron.* until March 11, 1896, p. 329. The species appears in the list of Awards of the Royal Horticultural Society (F. C. C. Veitch, September 21, 1886), but is not recorded in *Index Kewensis*, except in an erroneous record in the first supplement—"*Sanderianum* × *Reichb. f.* in *Gard. Chron.* (1888), 11., p. 273; et in *Reichenbachia*, I., t. 3—*Hyb. artef.*," the first reference applying to *C. Sanderianum* (*caudatum* × *Schlimii*) (*Gard. Chron.*, Nov. 20, 1886, p. 654), which was noted in the issue of Jan. 23, 1888, p. 113, as the £300 *Cypripedium*.

C. Sanderianum is a warm-house species. The flowers are of a yellowish ground colour, the upper sepal having broad chocolate-red stripes, and the arched and curved petals, which are often 18 inches in length or more, chocolate-red spotting, the surface of the lip being tinged with a lighter tint. *Cypripedium Sanderianum* has been crossed with about a dozen other species, and the progeny of all bear strong evidence of it in the peculiar curve of the upper part of the petals and in other details.



FIG. 80.—CYPRIPEDIUM SANDERIANUM.

AN AUTUMN-FLOWERING CHERRY.

Four or five years ago Mr. T. Smith, of Newry, put the beautiful and interesting new Cherry illustrated in fig. 81 into commerce as *Prunus Miqueliana*, under which name he had imported it from Japan. It is distinct from all other cultivated Cherries in flowering during November and December. The blossoms are about 1 inch in diameter, faint pink and fragrant; they are borne in short-stalked clusters of two or three along the shoots made the previous summer. As will be seen from the illustration, the flowers are "double," the petals of each one numbering ten to fifteen. As five is the normal number of petals in Cherry flowers, this is evidently a cultivated form of some species, native, no doubt, of Japan. What that species is is not yet clear. The name *P. Miqueliana*, under which it was sent to Mr. Smith, is certainly wrong. In December, 1913, when it was in blossom at Kew, it was sent to Professor Koehne, of Berlin, who is regarded as the leading authority on this genus in Europe. He identified the species as *P. microlepis*, and suggested the varietal name *Smithii* to distinguish this double-flowered variety. I have lately heard from Mr. E. H. Wilson, of the Arnold Arboretum, who has recently returned from a year's sojourn and travel in Japan. One of his special objects in that country was to study the Cherries, and I believe his notes and conclusions are to be published by the institution to which he is attached. In the meantime he disagrees with Koehne's determination of this Cherry. There is some excuse for all this uncertainty when we remember that the flowers are not normal and that no fruit is ever produced to aid in its identification. But nothing in all this need prevent anyone adding a charming tree to their gardens, and one which provides beauty and fragrance at the very dull season of the year. After all, the plant is the thing. *W. J. B.*

TREES AND SHRUBS.

FORMING NEW PLANTATIONS.

(Concluded from p. 229.)

Trees to Plant.—From a strictly commercial point of view, the best trees to plant are such as will produce the greatest quantity of the most valuable timber in the shortest space of time. With this end in view and taking into consideration the present prices of home-grown wood, one of the most valuable trees to plant is the Ash. At several sales during the past season fully 3s. per cubic foot was paid for first-class Ash timber, felled and lying in the woodland, and even at that price the supply by no means equals the demand. Of course, plenty of Ash timber can be bought at a little more than one-half of the price recorded, but for the more important purposes to which the wood is applied, such as the making of agricultural implements and parts of aeroplanes, young supple trees are alone in request. Then, in fairly good loam the Ash grows rapidly, the trees of thirty-three years' growth in a plantation that was sold lately in Bedfordshire averaging 48 feet in height, and each containing fully 14 cubic feet of timber.

Next to the Ash, probably the most valuable tree to plant is the white or Huntingdon Willow—that is from an economic point of view. The timber is much sought after by the maker of cricket bats, and at a large manufactory of these in London the average price paid for the best quality of wood is fully 4s. per cubic foot. Much higher prices have, however, been realised quite lately, and in the metropolitan area a single tree brought £10, and in Essex £25 was paid for four specimens of the true bat-making Willow. The tree is one of the simplest to propagate and cultivate, and at quite an early age—say from thirty to fifty years—is at its prime for turning out the best class of cricket-bats. Its

requirements as to soil are by no means great, a greasy loam and dampish situation suiting it well.

Sycamore timber, when clean and of large size, finds a ready market at quite remunerative prices, and 2s. 6d. per foot was paid for over seventy trees that had been removed from field and hedgerow on a farm in England. The tree is, therefore, one to be recommended for use in the formation of young plantations, for even in an immature state the wood is much sought after by the turner and furniture maker. The tree is quite hardy, bears exposure well and grows rapidly on fairly good soil.

Oak timber has many minor uses to which it can be applied when in a young state, yet it is



FIG. 81.—AN AUTUMN-FLOWERING CHERRY.

only after the tree has attained to a great age that the most valuable wood is produced. For returns during a lifetime the Oak, unlike the Larch and Ash, cannot be recommended for profitable planting. Mature Oak timber—say, from eighty to one hundred and fifty years old—finds a ready market at all prices up to fully 2s. 6d. per cubic foot.

For planting on chalk, limestone, or gravelly soils, the Beech is a valuable tree, and the timber, even in a young state, finds a steady market at quite remunerative prices. On the Chiltern Hills large quantities of Beech wood are annually used in the making of Windsor chairs, while the war has been responsible for a vast output of tent pegs and other materials for the Government.

Other hard-wooded trees worthy of being included in new plantations are the Elm, Poplar,

Birch, Alder and Spanish Chestnut. The latter on gravelly soils quickly produces timber that, according to the part of the country, sells readily at 1s. 2d. to 1s. 8d. per foot. For dampish land the Alder is a valuable tree, the timber selling for the manufacture of clog soles at from 7d. to 10d. per foot in the woodland.

Amongst coniferous trees the Larch is by far the most valuable of any that is cultivated in this country. When we combine its great aptitude to suit itself to nearly all conditions of soils, altitudes and diversities of climate, its long-established value as a timber tree, rapidity of growth and ease of culture, it is clear that no other coniferous tree cultivated in this country can be ranked on a par with the Larch. The durability of the wood of the Larch is generally recognised, and this peculiarity is noticeable when the timber is of only a few years' growth and in a comparatively immature condition. When compared with other coniferous woods, such as the Scotch Pine and Spruce, the timber of the Larch is almost doubly durable. For mining and railway purposes the durability of Larch wood makes it much sought after, this being further enhanced by its extreme lightness, a cubic foot when seasoned only weighing 34lb. It takes a good polish, works readily under the tools of the carpenter, and when seasoned is not liable to twist or warp.

The Scotch Pine for planting on poor gravelly soils and exposed upland situations is a valuable tree; but the timber does not realise a high price.

In the Douglas Fir, Sitka Spruce and Corsican and Weymouth Pines, we have less valuable coniferous trees from a strictly commercial point of view; but where soil is suitable, all may well enter into the composition of our plantations. The Douglas Fir produces a large quantity of fairly good timber, and the Corsican Pine on poor gravelly soils and exposed situations is a capital tree; but the timber cut from some of the largest trees in this country has hardly come up to expectation in the matter of lasting properties. At Gwydyr Castle the Weymouth Pine has done excellently on loose, shaly rock, and on an exposed ridge near the old chapel trees containing upwards of 200 feet of timber, with straight clean boles, some of which rise to 80 feet in height, may be seen. Five of these trees measured lately contained fully 1,200 feet of timber and girthed 10 feet at a yard up the stem.

But the Weymouth Pine is curiously erratic, and in a plantation on the Penrhyn Estate many of the trees were found to be "pumped," though growing on light soils inclined to gravel. The timber is light, clean and easily worked, and a comparison of a home-grown tree that contained 93 feet of wood with that produced abroad revealed but little difference.

For damp situations the Norway Spruce is to be recommended, but the timber does not realise a high price.

During the war and for a long time afterwards, Osiers for basketmaking, which have hitherto been mainly imported from the Continent, will be a valuable woodland crop, and where suitable land is available and quick return of invested capital imperative no better one could be grown.

Attention might also be directed to the cultivation of the Alder Buckthorn for charcoal-making. Owing mainly to its inflammable nature the charcoal produced by carbonising the wood of this native shrub has been found superior to any other in the making of smokeless powder and in the manufacture of explosives generally. From £12 to £15 per ton is the selling price of this wood, which is as readily cultivated as a crop of Willows and requires almost similar management.

What is known amongst gunpowder manufacturers as Dogwood is in reality *Rhamnus frangula*, which, however, is quite distinct from the true Dogwood (*Cornus*). *A. D. Webster.*

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (XLIX).

LE MARCHÉ HORTICOLE À BRUXELLES.

PAR la création de leur Obstzentrale de Bruxelles, les Allemands ont donc, disent-ils, voulu empêcher leurs trafiquants d'exploiter les consommateurs d'Outre-Rhin ainsi que ce fut le cas lors des fournitures de Pommes de terre hâtives de la région malinoise. Ils vont jusqu'à déclarer qu'ils tiennent aussi à protéger les producteurs belges contre la malhonnêteté des intermédiaires.

Des nouvelles sûres reçues récemment nous permettent de donner quelques renseignements sur les événements qui se sont déroulés lorsque les mesures restrictives ont été prises.

Quelques jours encore avant la promulgation de l'arrêté interdisant l'exportation des fruits et légumes, les fonctionnaires allemands multipliaient leurs démarches auprès des groupements de producteurs pour les amener à faire leurs envois directement vers Berlin. Des wagons spéciaux seraient mis à leur disposition. C'était par pure bienveillance envers les horticulteurs belges qu'ils insistaient pour qu'on donnât suite à leur demande. Mais, soucieux avant tout des conditions de vente, les intéressés s'informent aux Halles de Berlin, qui s'obstinent dans un silence prudent.

Subitement, on réserve tous les envois à l'Obstzentrale. On interdit aux nombreuses personnes s'occupant du commerce des fruits et légumes d'expédier quoi que ce soit en Allemagne; seuls les producteurs sont autorisés à vendre à la Centrale. Cette nouvelle inquiète vivement les producteurs qui ne sont pas montés pour faire les envois. Leurs représentants se mettent en rapport avec les administrateurs allemands pour leur expliquer que semblable décision va à l'encontre des intérêts. . . qu'ils se déclarent si chers.

Il convient à cette occasion de signaler l'attitude correcte du baron von Solemacher, le pomologue connu, actuellement major dans l'armée du Kaiser, et du pépiniériste allemand K. (de Forest). Tant d'Allemands se sont comportés d'une façon odieuse à l'égard des Belges dont ils avaient auparavant pu apprécier l'hospitalité, que les exceptions méritent d'être relevées. Ces personnalités ont vivement appuyé les démarches. La direction des Halles des Producteurs faisait notamment valoir que l'intermédiaire est un mal indispensable dans le commerce des fruits et légumes. Leur organisation avait créé, il y a quelques années, à Berlin même, une filiale pour la vente directe et avait rencontré un échec complet, alors que grâce à l'intervention des marchands qui font leurs achats à Bruxelles, les débouchés s'étendaient régulièrement. Rien que dans leur maison de vente, l'application de la mesure mettrait sur le pavé un personnel de 70 hommes, eux-mêmes producteurs ou parents de producteurs. Les conditions de vente à Bruxelles leur donnaient satisfaction, et ils demandaient le maintien des intermédiaires, tout au moins dans le commerce des fruits et légumes de luxe qui doit nécessairement se faire par des personnes pouvant également fournir de la volaille, du gibier, des fleurs coupées, etc.

Là dessus les représentants du gouvernement civil entrèrent en délibération et finirent par se mettre d'accord pour autoriser les marchands dûment établis à faire des envois, mais seulement à l'Obstzentrale, et cela à condition de verser un cautionnement de 3.000 francs et de ne pas dépasser des prix maxima. . . Ces maxima seraient établis en tenant compte des cours de Bruxelles et de Berlin. C'est assez ingénieux,

puisque le cours de Berlin dépendra du prix maximum autorisé à Bruxelles! On a beau prétendre alors que l'organisation (?) du commerce d'exportation n'a en vue que l'intérêt du producteur, et au moment où ces renseignements nous étaient envoyés de Bruxelles, on y nourrissait de vives appréhensions au sujet du fonctionnement du système. Tous les matins on devait y faire connaître aux acheteurs à la criée le prix maximum toléré pendant la journée.

ÉCOLE D'HORTICULTURE DE L'ÉTAT, À GAND.

PLUSIEURS anciens élèves de Gand, réfugiés en Angleterre, ont créé une section de leur Association des Anciens élèves et élèves, fondée avant la guerre. Les membres de cette section qui a pour but le développement de leurs connaissances horticoles par l'organisation de conférences, d'excursions, etc., font un appel à leurs collègues pour qu'ils se mettent en rapport avec eux. S'adresser à MM. Beeckman, Wuyts et Frater, 47, Cavendish Road, St. Albans, Herts.

NOUVELLES DIVERSES.

NOUVELLES DE LA GUERRE.—Ont été tués à l'ennemi: MM. Bertho et Fernand Gaté, contre-maitres aux pépinières André Leroy, d'Angers. M. Eugène Nollent, pépiniériste à Orléans, est signalé comme disparu depuis le 15 juillet. Le *Jardin* nous apprend aussi que MM. Baronnet et Ducloux, avocats-conseils de la Fédération des Syndicats horticoles, sont respectivement téléphoniste et sous-lieutenant d'infanterie dans l'Est. Le fils de M. G. Bellair est aux Dardanelles.

Parmi les tués allemands figure le fils aîné du grainier von Dippe, de Quedlinbourg.

COMMISSION DE LA MAIN-D'ŒUVRE AGRICOLE.—Le gouvernement français a constitué, pour la durée de la guerre, une commission mixte de la main-d'œuvre agricole, chargée d'étudier les questions se rattachant à l'emploi de la main-d'œuvre militaire pour les travaux de la terre, et d'une manière générale, au concours prêté à l'agriculture par les hommes présents sous les drapeaux. Cette commission est composée: du directeur de l'enseignement et des services agricoles ou son délégué (ministère de l'agriculture), et d'un officier supérieur de l'état-major de l'armée (ministère de la guerre).

LA RÉCOLTE DES SEMENCES DE LÉGUMES.—Beaucoup de semences horticoles étaient avant la guerre fournies par l'Allemagne. Il est donc intéressant de savoir ce qu'on dit là bas au sujet de la production de la saison. L'impossibilité d'exporter et la rareté des graines françaises, prévues dès le début des hostilités, ont eu pour effet une extension dans la culture des semences de Laitues et de Concombres. Pour d'autres produits d'origine étrangère, Radis, Epinard et Pois, moins demandés en Allemagne qu'ailleurs, peu de changement s'est produit, d'autant plus qu'il en restait en magasin des stocks assez importants. La sécheresse prolongée au printemps a eu une influence néfaste sur la production. Les Haricots se sont développés de façon très irrégulière; les variétés hâtives ont donné des rendements moyens; les semis tardifs ont été fortement endommagés par les gelées de la fin septembre. Les rendements des Pois sont très faibles; il en est de même pour les Concombres qui ont souffert énormément du mildiou. Les plantations des différentes races de Choux donnent de faibles

quantités de semences. Le Poireau a très bien donné mais l'importance de la culture est réduite. En résumé la situation est considérée comme très mauvaise.

ARRÊSTATION DE L'ABBÉ TORFS.—Les journaux ont annoncé qu'un des vicaires de Watermaal-Boitsfort, près de Bruxelles, avait été emprisonné par les Allemands, pour avoir facilité le départ des jeunes gens pouvant rejoindre l'armée belge. Nous apprenons qu'il s'agit de l'abbé Torfs, de Boitsfort, l'organisateur du mouvement syndical parmi les jardiniers belges. Les nombreuses associations qu'il a créées dans le Brabant et en Flandre ont singulièrement facilité l'essor de l'enseignement professionnel chez les horticulteurs et jardiniers de maison. M. Torfs a été condamné à quinze mois de prison. Le brevet de patriotisme lui décerné par les Allemands ne pourra qu'augmenter l'ardente sympathie dont il jouit dans les milieux qui ont pu apprécier son dévouement.

LE POMMES DE TERRE EN ALLEMAGNE.—Le problème des Pommes de terre semble à nouveau surgir en Allemagne. Le *Berliner Tageblatt* annonce que le secrétaire d'Etat Delbrück a invité le comité de l'alimentation, qui a été constitué par le Congrès des villes allemandes, à une conférence avec les autorités compétentes du ministère de l'intérieur, en vue d'examiner la question de l'approvisionnement en Pommes de terre. A la suite de cette conférence, à laquelle ont participé les bourgmestres de Berlin et de Munich, il a été décidé qu'une nouvelle conférence aurait lieu à l'hôtel de ville de Berlin, la question préoccupant vivement la population et le gouvernement.

INTERDICTION D'EXPORTER DES LÉGUMES.—Un arrêté royal pris à La Haye en date du 6 courant, interdit l'exportation de toute espèce de Choux, de Haricots, d'Oignons et de Carottes. Cet arrêté étend des restrictions antérieures dont nous avons parlé. On présume, en Hollande, que cette mesure n'est que provisoire et que bientôt des permis d'exporter pourront être délivrés par le Conseil Horticole de La Haye, à condition que pour chaque envoi une quantité déterminée des produits en question soit mise à la disposition du gouvernement pour la consommation intérieure. C'est la règle qui a été appliquée aux expéditions de Haricots.

KORT OVERZICHT VOOR DE VLAMINGEN.

DE Duitschers wilden van de Belgische kweekers bekomen dat ze hun fruit en groenten per wagon naar Berlijn zouden sturen, ten einde de tusschenhandelaars uit den weg te helpen. Dit stond den kweekers weinig aan daar de kooplieden niet kunnen gemist worden. Daarna werd alle rechtstreekse verzending door de kweekers, verboden. Nu moet alles geleverd worden aan de Obstzentrale die betaalt wat haar aanstaat.

In Brussel heeft die maatregel groote ongerustheid verwekt, alhoewel de Duitschen beweren dat het in 't belang der kweekers was dat ze hem namen.

Nu is de uitvoer uit Holland van koolen, boonen, ajun en wortels ook verboden. Onderpastoor Torfs, van Boschvoorde, inrichter van het Verbond der Bloemistgasten en Hoveniers, is tot vijftien maand gevang veroordeeld om het aanwerven der jongelingen voor het Belgisch leger bevoordeligd te hebben.

De aardappelen schijnen opnieuw schaarsch te zullen zijn in Duitschland.



THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

ROSES.—Climbing Polyantha and Wichuraiana Roses do exceedingly well on their own roots, and cuttings may be inserted now in a partially shaded border. Make the cuttings from strong lateral flower-growths, and insert them a few inches apart in rows made wide enough to allow a free use of the Dutch hoe, and to permit of staking. Take out a trench 6 inches deep and place a layer of sand in the bottom for the base of the cutting to rest on. Press the soil firmly around the cutting, so that there will be no danger of its being disturbed by the action of frost. Cuttings of climbing H.T.'s or Noisette Roses taken with a heel may be inserted in pots and rooted in a close frame or hand-light.

ALTERATIONS.—Where additions or alterations of the flower garden are contemplated, the work should be started forthwith, for ground that is dug, trenched, or levelled requires time to settle before planting can be satisfactorily undertaken. The details of the scheme, whether on a large or small scale, should be well considered beforehand. If it is necessary to provide drainage let this be done at first, for it would be a waste of labour to do the work at some future date, after the plants have been set. Certain plants require specially prepared sites, and this also must be attended to. Soils, manure, drainage, and everything else that is necessary should, as far as possible, be in readiness before the work commences.

GENERAL WORK.—With leaves constantly falling it will be a difficult matter to maintain tidiness, though fallen leaves are in their way beautiful, and are not objected to in some places. In any case, if more important work, such as planting, is pressing, collecting the leaves may be deferred until a more convenient time. It will, however, be necessary to remove them from lawns, especially where they drift. Grass will probably require cutting once or twice more with the machines. With showery weather and heavy dews worn-casts will be unsightly on lawns, and should be scattered by sweeping or by using Sillick's turf-brush. It is a good time to lay turf, as the roots of grasses are still growing, and will take hold of the soil much more quickly now than in colder weather. Strong weeds should be removed from lawns as time permits. Annuals sown a few weeks ago should be thinned severely. Give constant attention to cuttings of bedding plants, removing any which are decayed, and plucking off dead leaves. Shelves in fruit houses, where the trees are resting, are ideal positions for wintering the various Pelargoniums. Gaps in Box edgings may be made good, or new edgings planted. Cuttings of Box and Ivy may be inserted in an open border in a sandy compost. Vitis, Ampelopsis, Lonicera, and similar climbers may be increased from cuttings, rooted now. Select stout pieces of stems and cut them into 6-inch lengths. Dibble the cuttings firmly around the edge of pots filled with sandy soil, and root them in a cold frame, which should be kept close until roots form.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

PLANTING.—October is the best month for planting fruit trees of all kinds, therefore the preparation of the land should be completed forthwith. The ground is not very wet, is warm, and will work freely, enabling the trees to be lifted without destroying many of the fibrous roots. Make the holes sufficiently large to enable the roots to be spread out in all directions. Do not set the roots too deeply, and never plant when the soil is wet. In planting see that the spaces

between each layer of roots are filled with the finer particles of soil, and make the ground moderately firm by gently treading it as the work proceeds. Fruit trees that are lifted and planted carefully experience very little check, but they should be replanted directly the roots are exposed; if circumstances prevent this, the roots must be adequately protected from the sun and drying winds by covering them with wet sacking or mats. Stake standard trees immediately they are planted.

GATHERING FRUIT.—Continue to gather late Apples and Pears as they become ready. Quinces, Medlars, Walnuts, and other nuts should be harvested by this date. If it is not convenient to remove the husks of Walnuts as they are gathered, store the nuts in a dry place for a few days, when they will part easily from the husks without discoloration of the shells. Medlars should be allowed to remain on the trees for as long as possible, but should be gathered immediately they commence to drop, and be placed on clean sheeting or strips of stout calico, where they can be quickly and frequently examined, as they soon deteriorate. These fruits may be used for making jelly, if not required for dessert.

GREASE BANDING.—Grease bands should be placed in position on the stems to trap the codlin moth. See that no space is left between the bark and the band for the moths to ascend. Direct application of grease preparations to the stems of the trees is not to be recommended unless the composition is known to be harmless to vegetable tissues.

GENERAL REMARKS.—As the crops are cleared from wall and other trees, nets, muslin, or other material used to protect the fruit should be dried and stored for the winter. Take the opportunity to note what fresh material will be required for next season, and label each old portion with the size for easy reference next year. Without some method of this kind confusion will arise, as well as needless delays and loss of time during a busy season. Hoe the ground frequently to destroy weeds, for this will obviate hand weeding or digging in the weeds later. If not already done, remove all runners and dead foliage from Strawberry beds, lightly stir the surface of the soil, and apply a mulch of partly decayed manure. Gooseberries and Currant bushes that have been infested with insect pests during the past season should be sprayed thoroughly with an insecticide, and the soil around the stems of the trees dressed with lime. Lime or soot sprinkled over the bushes, after the foliage has fallen, will prove beneficial. Choose a time when the branches are damp with rain or dew, with the prospect of a fine day to follow.

FRUITS UNDER GLASS.

By JOHN HORTON, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

PEACHES.—The trees in the earlier houses are completely defoliated and preparations should be made for next season's forcing. Before unfastening the branches from the wires cut away surplus shoots or any that are badly placed and remove entirely extra strong growth arising from the base that would be likely to upset the balance of the tree. Having tied the shoots into bundles, thoroughly cleanse the woodwork and glass by scrubbing with moderately strong soapy water, which should afterwards be washed off by means of the garden engine or syringe. When this has been done untie the trees and scrub each growth carefully with an insecticide, a half-worn paint-brush being a suitable tool to use. This work must be done whether the trees have been attacked by insects or not, as it is necessary as a preventive. In training the shoots to the wires, let them be placed a suitable distance apart, for overcrowding is very harmful; each fruiting growth should be about 4 inches apart. Another danger to be avoided is the tying of the shoots too tightly, which would prevent the wood swelling in the growing season, and is often the cause of gumming.

PLANTING.—Assuming that preparations were made some time ago for planting, this important work should not be delayed. Where the

trees are simply to be moved from an outside wall or from one house to another, the check caused by transplanting, if the work is done carefully, should not result in failure to crop next season. In removing a tree of this description make a trench around the roots, work out the soil towards the tree and leave only a ball of sufficient size to be conveniently carried. Work a strong piece of canvas or an ordinary garden mat under the roots, and carefully remove the tree to a position prepared in advance. Having secured the branches to the trellis, trim the damaged roots, then spread all the roots out evenly. Trees received from a distance should be at once unpacked, and any damaged roots smoothly cut off. It is probable that the roots will be very dry, and if so they should be steeped in water before the tree is planted.

STRAWBERRIES.—Plants intended for forcing early should be fully exposed to sunlight and air to ripen the crowns. Unless during very wet and exceptionally cold weather the plants will force much better if they are left out-of-doors for some little time longer. The pots should be kept free from weeds and the roots regularly attended to for water. If the pots are well filled with roots, liquid manure from the farmyard will be beneficial to the plants.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CAULIFLOWERS.—Plants raised from seed sown a month ago are ready for potting into 4-inch pots. Use rich soil, and make it moderately firm. Place the plants in a cold pit within 15 inches of the roof-glass, and keep the pit closed until roots form, when air should be admitted freely on favourable occasions. On mild days the lights may be removed and replaced again at night, or during times of heavy rains. If the stock is short there is still time to make another sowing. In this case the seeds should be sown in boxes placed close to the roof-glass, as the plants are liable to become drawn in dull weather.

CABBAGES.—Make another plantation of Cabbages with a view to producing a succession to those planted a month ago. Choose rich ground, and set the plants at a distance of 18 inches each way. The earliest plants should be hoed frequently, for the ground must be free from weeds. Fill any blank spaces in the rows caused by failure, and dust the plants frequently with lime to keep slugs in check.

WINTER SPINACH.—This crop should be thinned carefully before the plants become crowded, for Spinach withstands the winter better, and the leaves are much larger, when plenty of space is allowed. The early batch of Spinach should be examined, and decaying plants or foliage removed. Hoe the soil frequently, and dust it from time to time with soot.

FRENCH BEANS.—If 7-inch pots are available make a sowing of Dwarf French Beans with a view to producing an occasional dish about the end of the year. Success with this crop will depend largely on the position given to the plants. They should be grown in a clean, light structure, within 18 inches of the roof-glass. A temperature of 65° at night is suitable in mild weather. The atmosphere must be moist, or red spider and other pests will be troublesome. Syringe the pots several times daily and the foliage at least once daily, also frequently damp the floor and walls. Ventilate the house freely when the weather is favourable for admitting air, but not otherwise, for cold draughts are harmful. The soil may consist of three parts sandy loam and one part leaf-mould. Use plenty of crocks for drainage, and pot moderately firm. Cover the seeds with 1 inch of fine soil. French Beans in pits must not be allowed to suffer from want of moisture at the roots. Ventilate the pit freely during mild weather, and use sufficient fire-heat to keep the atmosphere buoyant. The roots may be fed with manure water from the farmyard. Place a few twigs along the rows to keep the shoots upright. Pot plants also should be staked.

BEET.—The latest batch of Beet should be lifted before the weather becomes very cold. Store the roots in a frost-proof shed, and cover them with clean sand.

POTATOS.—All late Potatos should be lifted with as little delay as possible. When the tubers are dry they may be stored in pits. A good covering of straw or dry Fern should be used as the soil is being placed in position to ward off the winter rains, and sufficient quantity of soil should be used to protect the tubers from severe frosts. Cover Potatos in the store-room with some material to exclude the light.

TURNIPS.—Turnips should be lifted as soon as the roots are of sufficient size for use, and placed in a cool position where rain will not reach them. Do not arrange the roots in large quantities or they may engender heat and start into growth. Late-sown Turnips may be left in the ground for some time to come.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

EUPHORBIA (POINSETTIA) PULCHERRIMA.—The plants forming the earliest batch of Poinsettias have completed their growth, and are developing bracts. A temperature of 60° to 65° by night, with a few degrees higher by day, will be suitable. Discontinue overhead syringing, but damp lightly between the pots to promote sufficient atmospheric moisture after the bracts have formed. Water the roots with great care, using clear water only, for it is important to keep the foliage in good condition for as long as possible. The temperature may drop to 55° at night when the bracts are fully developed. Continue to feed and syringe lightly later plants, according to the weather, and water the roots only when moisture is absolutely necessary, for an excess of root-watering would be certain to result in a loss of foliage.

BEGONIA GLOIRE DE SCEAUX.—The fine autumn has suited this beautiful winter-flowering Begonia, for the plants have made rapid growth. Continue to feed the roots liberally until the flowers begin to show colour, and promote atmospheric moisture by syringing between the pots and other bare places. Let the plants have plenty of room, and they will form beautiful pyramids of flowers. A few well-grown plants are preferable to a number of weak, drawn specimens which have lost their foliage through overcrowding. The temperatures should be the same as those recommended for Poinsettias, allowing a gradual decrease as the plants come into full flower.

RICHARDIA (ARUM).—Plants lifted and potted as advised in a former calendar and subsequently afforded temporary protection should be placed in a warm greenhouse, for frost soon cripples the plants. Early potted plants are becoming well established in their pots, and must not receive a check from exposure to frost or cold nights.

HOUSING PLANTS.—The nights are now getting cold and frost may occur at any time. All tender plants should be placed in the glass-houses or other provision made for their protection from cold. Space indoors is not always available, and some of the hardier subjects may, with some kind of protection, be left out-of-doors for a little longer. Both the pots and the plants should be cleansed thoroughly, and also the house which is to receive them. Stand the plants well apart, and in all cases admit plenty of air to the house, for if it is kept too close certain of the plants may make fresh growth, which is not desirable.

ZONAL PELARONIUM.—Plants which have been grown for winter flowering should be removed to their winter quarters without delay, for if they remain in cold frames after this date the flower-trusses are liable to injury by damping. In a mild and rather dry atmosphere, with a temperature of 50° to 55°, and free ventilation on bright days, the plants will maintain a brilliant display for many weeks. Feed the roots with liquid manure at regular intervals.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castletord, Chepstow, Gloucestershire.

RAISING DISAS FROM SEED.—The following successful plan of raising Disas was practised by myself a few years ago. The seed was sown directly it was ripe around plants of *Cypripedium*, *Disa*, *Zygopetalum Mackayi* and *Odonoglossum*, which had nearly filled their pots with roots. The seeds germinated in a few weeks, and most seedlings appeared on the *Zygopetalum*, which was growing in a temperature of 65°. The other plants remained in their respective divisions. The surface of the compost was kept free from Sphagnum-moss and other growth that would be likely to smother the tiny seedlings. The soil of the host plants was never allowed to become dry. When two small leaves formed the seedlings were transplanted carefully into store pots, and afterwards grown in a temperature of 55° to 60°. When large enough, each seedling was potted singly. If the plants are repotted as increased root-room is required and kept growing, the stronger will flower in about two years from the time of seed-sowing. Thrips are troublesome pests, particularly in the seedlings' early stages, and constant attention is needed to keep them in check. Dipping the plants in a solution of "XL All" insecticide is always effectual. In regard to *D. grandiflora* fertilised with its own pollen, with a very few exceptions the seedlings were equal in size and colour to imported plants.

BIFRENARIA.—This genus is closely allied to *Maxillaria*, and requires the same cultural treatment. *B. Harrisoniae* is the finest species, and the most common in gardens.

WATERING.—Seedlings require more attention in watering than the plants in the ordinary houses. The latter may be examined every second day, and tepid rainwater should always be used. Plants that have finished growing need only sufficient moisture to prevent the pseudo-bulbs from shrivelling; but others that are still rooting freely and developing their top-growth must be watered copiously until the pseudo-bulbs are matured. From now onwards overhead sprayings should be discontinued except in the case of seedlings, which may be lightly dewed over in the early part of the day if the weather is congenial. Each division will require vaporising occasionally to keep thrips and other insect pests in check.

CLEANSING THE HOUSES AND PLANTS.—The work of potting being practically finished for the season, there will be opportunity to cleanse the woodwork, glass, and walls of the houses, both inside and out. The staging also should be made tidy and the moisture-holding material replaced. Pots may be scrubbed, the plants examined for scale insects, and the leaves sponged carefully with a weak insecticide. When everything is ready, the plants may be rearranged, staging them fairly close to the roof-glass. Sickly plants should be placed together, where they may receive special attention.

THE "FRENCH" GARDEN.

By P. AQUATAS.

NURSERY BEDS.—In our gardens everything, except the cloches, is in readiness for pricking out seedling Lettuces. The cloches will only be placed in position after heavy rain, as the ground is too dry for transplanting, which is a tedious operation, as it is essential to begin the work as soon as the cotyledons expand if plants of even growth are required for use in spring. Where there are plenty of cloches it is preferable to set only twenty-four plants in each. If the first sowing proved a failure make a second at once. In mild winters these late plants prove suitable for January planting, and they can always be relied upon for February. The cloches should be kept closed for a fortnight, but afterwards abundant ventilation should be afforded in genial weather, for the hardier the plants are the less liable are they to attacks of mildew. It is necessary to guard against slugs which can be found clinging to the glass in the early morning. Make the first sowing of Cauliflowers for planting in the open, in a frame. Plants from these

late sowings are preferable to those raised in September, as they never produce heads prematurely. If the weather is not favourable for an earlier date the final planting may be deferred until early in April. The earliest batch raised from seed sown three weeks ago should be pricked out 750 per frame. A good top dressing of black soil is essential to obtain healthy specimens for setting out in frames in February.

OLD MANURE BEDS.—The Celery crop having been marketed the beds should be cleared of rubbish. Remove the material of the bed to a width of 5 feet to make a trench for turning over the whole of the old manure. It should be broken roughly with the fork, and dry portions spread on the top to decay quickly. Throw the mass from the outside paths towards the centre. The Carrots are ready for marketing, but as the weather is open and growth luxuriant and clean, the marketing of the roots may be deferred for two or three weeks, when they will realise a better price.

CROPS UNDER GLASS.—Winter Lettuces have thriven splendidly, and where the ground is moist they will only require ventilating and freeing from decayed leaves. This crop resents undue coddling, and will bear a few degrees of frost. Mats should only be used when absolutely necessary. The first heads will be available in two or three weeks, and the crop should give a constant succession till Christmas. Frost on October 1 was very harmful to the last batch of Beans, except where they were covered, as advised in my last notes. Since ventilation has been afforded daily with open and sunny weather the plants have produced beautiful pods. Some more of the foliage should be thinned out to allow a free circulation of air and prevent damping, which is as detrimental as a frost. See that the leaves do not touch the glass; to prevent this raise the frames if necessary.

OUTSIDE CROPS.—The second crop of red Celery should be fully earthed, so that the plants may form a succession to the first batch now being marketed. The third batch should be ridged half-way up with fine soil, and may then be left until Christmas before the earthing up is completed. The dry weather has somewhat delayed the planting of spring Cabbages. Where the ground is dry it is a good plan to plant with the spade, a workman plunging the tool into the ground and opening a space by pushing the handle from him, and a boy placing the plants in the hole as far as the bottom leaves. With this method the roots are in a moist medium, and spade plants are set much more quickly than with a dibber. Spinach sown in August will be benefited by stirring the soil with the hoe, and removing the largest and oldest leaves, which are always liable to mildew. Witloof Chicory is ready for forcing, and the batch should be divided into three lots. The first roots should be lifted and all leaves broken off by hand (not cut). Allow the roots to remain for ten or fifteen days on the ground to check growth, previous to placing them in the forcing beds.

THE APIARY.

By CHLORIS.

PAINTING HIVES.—When the weather is fine the hives should be painted and made watertight. Damp is the great enemy of bees and is the cause of dysentery trouble in early spring. If it is not convenient to paint the whole hive, then the top at least should be painted. The first coating should be thin and well rubbed into the woodwork. First scrape the surface and rub it smooth with glasspaper. After the first coat is applied cracks in the woodwork should be stopped with putty, which should be well worked into the crevices. It will be found more satisfactory if three coats of paint be used. Where the roofs are in a bad condition, stretch calico tightly over them and secure it with tacks along the edges. The fabric should receive several coats of paint until an even, smooth surface is obtained. Remove grass and weeds from the apiary, and spread a thick layer of ashes around so that the Dutch hoe may be used freely during the summer.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**
Editors and Publisher.—Our Correspondents would oblige by delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 18—
 Nat. Chrys. Soc. Executive and Floral Coms. meet.
THURSDAY, OCTOBER 21—
 Manchester and N. of Eng. Orchid Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 48.8.

ACTUAL TEMPERATURE :—
 Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday, October 14* (10 a.m.): Bar. 30.2. Temp. 57°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
 Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 10.30.
MONDAY AND WEDNESDAY—
 Bulbs, Perennials, Bay Trees, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.
MONDAY—
 Nursery Stock, at Longreach Nurseries, Keynsham, by Protheroe and Morris, at 12.
TUESDAY AND WEDNESDAY—
 Clearance sale of Nursery Stock at Turner's Nursery, Uxbridge, by Protheroe and Morris, at 12.
WEDNESDAY, THURSDAY AND FRIDAY—
 Nursery stock at Woodlands Nurseries, Maresfield, Sussex, by Protheroe and Morris, at 12.
 Trade sale Bulbs, &c., by Protheroe and Morris, at 67 and 68, Cheapside, at 1.
 Large consignments of Roses, Shrubs, &c., at Stevens' Rooms, King Street, Covent Garden.

Horticulturists and the Food Supply. It is becoming more and more fully recognised that the need for increasing home-grown

supplies of food is very great. Not only will such increase stave off risk of shortage of supply, but it will also reduce imports, and thereby help to redress the balance between exports and imports, and so assist in preventing the rate of exchange rising against us. The Government is urging farmers to increase their acreage under such crops as cereals and Potatos, and it is to be expected that certain types of grass land will find themselves once again under the plough.

Although horticulture deals on a less vast scale with this question of food supply, nevertheless, as we have urged frequently, gardeners collectively have control of a very great area of land, and it behoves them generally to do all that lies in their power to help to increase the food available for the people.

Of the crops which are common to agriculture and horticulture, the Potato is first in economic importance, and it is clearly the duty of all those who have the charge of suitable land to increase the area under this crop. The average agricultural yield of Potatos in this country is by no means high, and those who cultivate on a small scale may expect to obtain yields very considerably larger than those which satisfy the farmer. We urge, therefore, on all gardeners, when they are making

plans for next year's cropping of their land, to take into consideration the importance of increasing the area under Potatos. The present price is an indication that larger breadths might well be grown, and the needs of our armies abroad are bound, if the war continues, to make heavy demands on next year's harvest. In putting down extra land to Potatos it should be remembered that this crop is one which thrives extremely well if the land be dressed only with artificial manures, and that of the three types of fertiliser potash is specially stimulating to the growth of the Potato. Although potash manures are not to be obtained, a persistent tending of the garden bonfire will provide a certain, and by no means inconsiderable, supply of potash. In this connection it should be remembered that the potash so obtained is highly soluble, and hence, if the heap of ashes be left exposed to the rain, even for a day, a very large proportion—about 50 per cent. it may be—lost from the heap.

Therefore will the thrifty gardener see that the ashes from the bonfires are protected from this loss.

He will also remember that wood ashes may be mixed with superphosphate before distribution on the land. If such a mixture be applied at the rate of 3 cwt. to the acre the benefit to the crop will be very great indeed.

Those who live in the districts in which black scab is rife should be careful to plant none but scab-resisting varieties. The fact that varieties exist which are indeed immune from black scab cannot be too widely known. The most recent tests carried out in a district badly affected by the disease are reported on p. 251 of this issue, and demonstrate that the grower who has the misfortune to have land infected with the disease has the remedy in his own hands.

Lastly, the preventive value of Bordeaux mixture against attack of late blight should be borne in mind, and, above all, the tubers should be sprouted in boxes before they are planted.

THE STELVIO PASS.—The illustration in fig. 82 gives a view of the Ortler range and Trafoi Hotel from the foot of the Stelvio Pass, with plants of *Saxifraga aizoon* in the foreground. The Ortler is the highest mountain in Austria, and the Stelvio Pass (9,055ft.) is the highest in Europe over which a carriage road passes. Possession of the pass is being hotly contested by the Italian and Austrian troops, who have recently been fighting on some of the high mountains of the immediate neighbourhood, and the Italian Alpine troops have made considerable headway. On the Italian side of the Stelvio *Horminum pyrenaicum*, one of the few Labiates grown in rock gardens, begins to appear. It is absent from most of the western Alps, though abundant in Tyrol. In the Trafoi district are many good Alpines, including large quantities of the beautiful blue *Atragene* (*Clematis*) *alpina*. The Italians have taken by assault the Suldenspitz (10,972ft.), which is north-west of the Ortler, and was strongly held by the enemy. On September 20 an Italian Alpine column carried a gun to a summit emerging from a glacier at a height of 10,500ft., south of the Koenigspitze, which mountain is not so high as, but much more difficult to climb than, the Ortler.

CHRYSANTHEMUMS IN THE LONDON PARKS.

—Chrysanthemum exhibitions will be opened to the public at the undermentioned parks belonging to the London County Council on the days named of the present month :—Brockwell Park, 16th; Finsbury Park, 14th; Southwark Park, 16th; Victoria Park, 16th; Waterlow Park, 21st. The exhibition at Battersea Park opened on the 13th inst.

EDINBURGH PUBLIC PARKS AND GARDENS.

The annual report of Mr. J. W. M'HATTIE, the superintendent of the Edinburgh parks, has just been presented to the Town Council, and affords a valuable record of the progress made in the Parks Department during the past few years. The report is considerably more elaborate and exhaustive than usual; it shows in detail the history of the various parks and open spaces, gives a plan of the city and its parks, is illustrated with coloured and other illustrations of the parks and gardens, and affords details of the income and expenditure. The total expenditure during the past year was £16,095, against which there was a revenue of £324 3s. The park employees number 114, and wages account for an expenditure of £6,435. There are 35 public parks, gardens and open spaces under the department, the Botanic Gardens and Holyrood Park being under the control of the Crown. Ten golf courses, 86 football pitches, 11 cricket pitches, and 20 bowling greens are managed by the Parks Department. The report is a record of good work carried out by Mr. J. W. M'HATTIE and his staff.

DISTRIBUTION OF SURPLUS BEDDING PLANTS FROM PUBLIC PARKS.

—The surplus bedding plants at the London County Council parks and gardens will be distributed to the public on Saturday, the 16th inst. Persons desiring to participate in the distribution, which will be made between the hours of 9 a.m. and 11 a.m., should make personal application at the parks or gardens. Plants will not be handed to children under the age of fourteen unless a note is presented from parents or teachers. The Commissioners of His Majesty's Works and Public Buildings also intend to distribute among the working classes and the poor the surplus bedding-out plants in Hyde Park, the Regent's Park, Greenwich Park, and the Pleasure Gardens, Hampton Court. The clergy, school committees, and others interested should make application to the superintendent of the park nearest to their respective parishes, or to the Superintendent of Hampton Court Gardens, if they desire to receive any of these plants. The distributions will take place as follows :—Hyde Park, October 20; Regent's Park, October 15 and 16; Hampton Court Gardens, October 15; Greenwich Park, October 15.

GOLDEN WEDDING OF A FORESTER.

Mr. and Mrs. JAMES HENDERSON, Southwick, Kirkcudbrightshire, recently celebrated their golden wedding, and have been the recipients of marks of esteem. Mr. HENDERSON has been forester to Sir MARK J. M'TAGGART-STEWART, Bart., for the long period of forty-nine years. His son, Mr. JAMES HENDERSON, jun., is gardener to J. WYLIE, Esq., Elmbank, Dumfries.

EVESHAM CHRYSANTHEMUM SHOW.

—We learn from the secretary of the local horticultural society that there will be no Chrysanthemum show held in Evesham this year.

MR. A. G. NICHOLS.—The friends of Mr. A. G. NICHOLS, who was obliged through ill health in June last to relinquish his post as gardener to the Duke of WELLINGTON at Strathfieldsaye, will be pleased to learn that he has now completely recovered his health. Mr. NICHOLS held the position of gardener at Strathfieldsaye for nearly fifteen years.

LILIAM AURATUM.—Mr. A. GROVE, Kentons, Henley-on-Thames, asks us to inquire if any amateur among our readers can spare him a little seed of *Lilium auratum* or *L. c. macranthum*.



FIG. 82.—THE ORTLER RANGE FROM THE FOOT OF THE STELVIO PASS.
(See p. 248.)

WAR ITEMS.—Lance-Corporal DAVID M. SMALL, 12th Battalion Royal Scots, and formerly gardener at Inverell House, North Berwick, has been killed in France.

—Lieut. CAMPBELL DRUMMOND, of the 2nd King's Own Scottish Borderers, has been killed in action in France. He was the son of Mr. P. DRUMMOND, of Messrs. DRUMMOND, nurserymen and seedsmen, Stirling. He joined the Army at the outbreak of the war.

—Lance-Corporal SAMUEL CORSON, 6th K.O.S.B., has been killed in action in France. He was a journeyman in the gardens of Mr. MAITLAND-HERIOT, of Whitecroft, Dumfries, when he joined the Army in August, 1914. He served his apprenticeship at Cargen, Kirkcudbrightshire, the seat of Colonel DUDGEON, C.B.

—Private R. ALLAN, 7th (Service) Battalion Cameron Highlanders, unofficially reported missing, is a son of Mr. JAMES ALLAN, gardener to J. PHIMROSE, Esq., Arundel House, Maxwelltown. Another son, Private JOHN ALLAN, has been invalided home from the Dardanelles.

—Sergeant H. W. FORBES, son of Mr. ARTHUR FORBES, forester to Lord Binning, at Mellerstain, Berwickshire, has been killed by the shelling of a hospital in which he was lying wounded.

—Sergeant WILLIAM B. EWART, who has died at the General Hospital, Le Tréport, from a wound in the neck, was the son of a well-known Scottish gardener, Mr. JAMES EWART, gardener at Powfoulis, Falkirk, Stirlingshire.

—Rifleman LEONARD W. SILK, 12th K.R.R., son of Mr. W. SILK, Littleton House Gardens, Blandford, was killed in France, October 6. Rifleman SILK was twenty years of age; he was formerly employed in Messrs. SANDER'S nursery at St. Albans, the late MARTIN SUTTON'S garden at Wargrave Manor, and prior to enlistment on the outbreak of war, was engaged at Packington Hall Gardens, Coventry.

—Sergeant ROWLAND L. CORRY (aged 25), of the Honourable Artillery Company, son of Mr. W. LONGMAN CORRY, managing director of Messrs. CORRY AND CO., LTD., Bedford Chambers, Covent Garden, was killed in action in France on September 24. His captain, writing to his father, says: "By his death the regiment has lost one of its best non-commissioned officers, and his loss will be most keenly felt. He was every man's friend in his company, invariably carried out his duties in a most soldierly manner, and at the same time in a most cheery spirit. He was beloved by all."

—We learn that Captain RIVOIRE, secretary of the French Chrysanthemum Society, is stationed at Marseilles. The climate of the South has been the cause of a prolonged indisposition, but his many friends in this country will be pleased to know that he is well again and on duty.

—A short note from M. AUG. NONIN informs us that his son, Lient. H. NONIN, is in good health, and that M. GUSTAVE CLEMENT, president of the Paris Chrysanthemum Committee, is likewise quite well.

THE HALFPENNY POST AND HORTICULTURE.—The announcement that the halfpenny post is to be retained will be received with relief and satisfaction by those engaged in the horticultural trade. The increase originally proposed would have struck a severe blow at the trade of many seedsmen, and it would have been felt severely by the horticultural Press.

DOMINICA BOTANIC GARDENS.—The island of Dominica was visited by a heavy gale on the night of August 10, which caused a great deal of damage in the Botanic Gardens and other places. About 100 trees, some of large size, were uprooted, and many others lost their tops or some portion of their branches. Unfortunately a number of species of which there was

only a single specimen have been destroyed. The Curator, Mr. J. JONES, states that it will be a long time before the gardens can be fully restored to the condition in which they were before the gale.

OUR FOOD SUPPLY.—Under this title a letter appeared recently in the public press recommending that, in lieu of bulbs, Onions should be planted. The writer who goes to such extreme lengths in a good cause refrains from giving "cultural details" as to the method whereby Onions may be grown successfully at this time of the year; nor does he state whether he would use them instead of bulbs for naturalising in grass. The British nation has a reputation for sane judgment, a steady moderation, and those qualities it will maintain. We are suffering for the moment from too much advice, and it is a pity that much of the worst advice on technical subjects should gain publicity in the general press. Thus it was urged recently—apparently in all seriousness—that as Kew has the finest collection of "vegetables" in the world, it should send its staff as horticultural missionaries to preach the gospel of vegetable cultivation throughout the country.

POTATO EXHIBITION IN SCOTLAND.—At Ormskirk, on the 7th, 8th and 9th inst., a Potato exhibition was held, under the auspices of the Lancashire Farmers' Association and the Board of Agriculture. In the spring of the present year the Board of Agriculture resolved to carry out on a larger scale the experiments which have been for a number of years so ably carried on at the Harper Adams College, Newport, Salop, by Mr. GEORGE MALTHEUSE, and Ormskirk was selected as the venue. Mr. JOHN SNELL, one of the Board's divisional inspectors, had charge of the experiments, and the thorough way in which they have been conducted must be satisfactory to all concerned. Undoubtedly the most remarkable thing about the experiments has been the confirmation of Mr. MALTHEUSE'S work and the lists of varieties immune from wart disease issued from time to time by the Board of Agriculture. Ormskirk is in the centre of a district which is badly infected with "black scab," as the disease is locally termed. Fourteen pounds each of over ninety varieties were grown in a piece of ground which was well known to be badly infected, and the results are as follows:—Immune varieties: Great Scot, The Admiral, Cuckles Castle, The Duchess, Golden Wonder, Sutton's A 1, King George, Crown Jewel, Shamrock, Dobbie's Favourite, Burnhouse Beauty, The Provost, Dobbie's Resistant Snowdrop, Leinster Wonder, Mr. Bresse, St. Malo Kidney, Sutton's Abundance, Irish Queen, What's Wanted, Conquest, Kerr's Pink, Jeanie Deans, White City, King Albert, Carter's Snowball, Langworthy, King of the Russets and Southampton Wonder. Varieties of doubtful immunity: Dominion, Five Mile Town, Secundus, Punta Arenas, The Allies, Table King, Teagood's Success, Irish Hero, Mauve Queen and Leicester Seedling. Non-immune varieties: Avon Queen, Webb's First Crop, Raynes Park Wonder, General Joffre, Up-to-Date, Tribute, Alpha, Craigie Early, New Guardian, Epicure, Ebor, Prosperity, Sir Edward Carson, Carter's Mainstay, Cropwell, Webb's Express, Scottish Standard, Arran Chief, Iron Duke, Royal Standard, British Queen, Royal Salute, Witchhill, Isis, Scottish Farmer, Carisbrook Castle, Arran Beauty, Dalmeny Perfection, Jolly Roger, Summit, Dr. Kitchen, Mighty Atom, Balmoral Castle, Stourbridge Glory, White Ensign, Colonist, Early Bird, Dobbie's Exhibition Red Kidney, Edzell Blue, Dalmeny Regent, Dalmeny Early, Ensign Bagley, Teagood's Tremendous, Midsummer Early, Coral Red Kidney, Herd Laddie, Carter's Early Favourite and King Edward. The Earl of Derry offered three Gold Medals for the three best immune varieties, early, second early and late, and these were all won by Messrs. DOBBIE AND CO., of Edinburgh,

whilst the Silver Cup, for the winner of the most points, offered by the Hon. A. STANLEY, M.P., who visited the show and presided at the tea, was jointly won by Messrs. A. and A. REID, of Scotland, and Mr. GEO. ASHLEY, of Irlam, Manchester. Messrs. DOBBIE AND CO. were also awarded a Gold Medal by the society for a non-competitive exhibit of Potatoes and other root vegetables. The proceeds of the show were given in aid of the British Farmers' Red Cross Fund.

CHRYSANTHEMUM ROMANCE.—On Monday, the 4th inst., the first of the series of lectures organised by the National Chrysanthemum Society for the session was delivered by Mr. HARMAN PAYNE at Carr's Restaurant, Strand. The chair was taken by Mr. T. Bevan. The title of the address was "A Chat about the Golden Flower: Its Poetical, Mythical, and Romantic Associations." Mr. Payne related a succession of Oriental stories, myths, and legends that he had collected from many sources for thirty years past. Translations of Chinese and Japanese poems with fabulous stories of the power the Golden Flower is supposed to have of conferring immortality and other quaint beliefs were given. The Emperor of Japan's garden party, dating back to the ninth century, the story of the blue Chrysanthemum, the Festival of Happiness as shown at Dangozaka, all received liberal treatment and created much interest. References to Confucius, Tao-Yuan-Ming, Chautun-i, and other Orientals connected with the flower were cited. The lecture was illustrated with numerous interesting lantern slides specially prepared for the occasion. At the close Mr. Payne was accorded a hearty vote of thanks. The next lecture will be given by Dr. Keeble, F.R.S., at the same time and place on November 3.

THE LABOUR PROBLEM.—The Board of Agriculture and Fisheries has been informed by the Army Council that, in view of the possible shortage of agricultural labour for the autumn cultivations, furlough will be given at the discretion of the military authorities and as circumstances may permit, to a limited number of soldiers of the new armies and of the Territorial Force who have been accustomed to work farm horses. The employment of soldiers will be subject to the following conditions:—1. That suitable labour cannot be obtained in the locality. 2. That the farmer will undertake to pay each soldier sent at his request: (a) 4s. a day if the soldier provides his own board and lodging; (b) 2s. 6d. a day if board and lodging is provided by the farmer. The hours worked to be those customary in the district. 3. That the farmer will provide conveyance from and to the nearest railway station. The above rates to be inclusive of all allowances and to be paid wet or fine. No charge will be made to the farmer for railway travelling expenses. Applications from farmers who desire to employ soldiers must be made as soon as possible to the Board of Trade Labour Exchanges.

"LE JARDIN."—The current issue of *Le Jardin*, which journal is now issued once a month, gives an interesting biographical sketch of Captain BERNET, the first grower in Europe to raise the Chrysanthemum from seed. If the dates at the head of the article, 1775-1885, refer to the birth and death of this eminent man, our contemporary has erred, for Captain BERNET died in 1855.

PUBLICATIONS RECEIVED.—*Quarterly Journal of Forestry*, October, 1915. Vol. IX., No. 4. (London: Loughton & Co., Ltd.) Price 2s.—*Hardy Roses: Their Culture in Canada*. By W. T. Macoun and F. E. Buck. Bulletin 85. (Ottawa: Dominion of Canada Department of Agriculture.)—*The Spirit of the Soil*. By G. D. Knox, with a foreword by Professor W. B. Bottomley. (London: Constable & Co., Ltd.) 2s. 6d. net.

HOME CORRESPONDENCE.

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

WOMEN GARDENER (see p. 219).—Your correspondent, S. J. Martin, ought to know that gardeners have been told from the housetops, as it were, for years that their only chance of getting fair conditions of employment is by combining. A question raised by your correspondent is, "Shall women be allowed to fill the gaps in the gardener ranks caused by Lord Kitchener's call for men?" The gaps must be filled or the gardens will cease to be. There were the elderly gardeners, too old for the battlefield, and the boys, fresh from school, and the women, to choose from. The first were soon used up; the second are not old enough, but the women have come forward in surprising numbers. In these times it is not a question of skill or experience so much as willingness, intelligence, and some idea of the work, and to discourage the women who offer their services on the farm or in the garden ought to make Mr. Lloyd George angry. Garden work has not the attractions of the hundred and one light occupations for which women are supposed to be fitted, but there are in this country many women who have had training and experience as gardeners. Fifteen of them are employed at Kew, and their enthusiasm, industry and efficiency are equal to those of the average young man. They work the same hours, and are paid the same wages, as the men who have been engaged to keep the places of those who have enlisted. It is right and necessary that the women should insist on the same wages as the men: evidently the women's associations instruct them to do this. Women able and willing to do garden work should pay no attention to the grumbling and threats of those men who appear to forget how to be fair where women workers are concerned. Nor should employers hesitate to try women because their detractors say they are sure to make a mess of things, that they cannot work, or will not work, or do not know how. Many women no doubt have such defects, and so, for that matter, have many young men. Surely it is an augury for good that whilst our young men are fighting our young women are striving to keep things going and in order at home. If they thought only of tennis and hockey and such things at a time like this, what should we think of them? W. W.

NODULES ON THE INTERMEDIATE BLADDER-WORT (see p. 234).—Mr. Harold Evans' surmise is correct. The terminal green buds on the leaves of the Bladderworts are the "winter buds," which are formed in autumn when the plant has finished growth for the year. The plant then sinks to the bottom of the water and decays, except these winter buds, which remain there until the spring, when they begin to unfold and rise to the surface. A similar phenomenon may be observed in the Frog-bit (*Hydrocharis*), but here the buds are formed at the ends of some of the runners, instead of on the leaves; the rest of the procedure is, however, identical with that of the Bladderworts. In *Pinguicula* (the Butterwort), closely allied to the Bladderwort, a winter bud, rather suggesting a miniature Lily bud, is formed in autumn in the centre of the rosette of leaves, and is the only remaining part of the plant when the leaves have all decayed. It lies buried in moss and decaying vegetation until spring awakens its activities and causes it to expand into a little rosette, the beginning of the new year's plant. In *Drosera* (Sundew) there is a similar arrangement, except that the unexpanded leaves form a tiny cluster in the centre of the rosette, and remain after the latter dies down. The whole process in all these groups may be studied with ease if a very large propagating, or other earthenware, pan be arranged to form a miniature bog. It should be at least 18 inches in diameter and 6 inches in depth, and must have no drainage holes. Cover the bottom about 1 inch deep with peaty soil from a bog and build it up around the centre of the pan to within about an inch or two of the top edge; on the peat round the outer margin arrange little blocks of peat containing plants of *Drosera*, *Pinguicula*, *Anagallis*, *Wahlenbergia* (*Campanula*) *hederacea*, minia-

ture rushes and sedges and any other tiny bog plant to help fill up. Leave the centre, say about 9 inches diameter, and avoiding a circular outline, quite free for the pool to contain the *Hydrocharis* and *Utricularia*, and round its immediate edge plant *Parnassia palustris*, *Saxifraga aizoides*, *Narthecium ossifragum* and *Epipactis palustris*. All these are wild British species, and may be found in most bogs in southern England and Wales, except *Parnassia*, which is local, and *Saxifraga aizoides*, which is found mostly in the north. The blocks of peat with the plants must be wedged closely together, and any gaps should be filled in with little clumps of small mosses, which will afterwards grow and cement the whole into a compact mass. *Sphagnum* may be planted near the central pool, as this moss requires plenty of water. The pool must be kept full of rain, river, or bog water, and the whole "bog" should be kept out-of-doors in a sheltered half-shady place, where it may be protected from the hottest sun. If the pan be partly sunk in the ground amongst low plants it will help to conserve its moisture, and at the same time small insects suitable as food for the *Droseras* and *Pinguiculas* will be more likely to frequent it. A good watering with soft water from a rose-can now and again, preferably in the early morning, will be beneficial in hot weather. C. Nicholson, 35, The Avenue, Hale End, Chingford, Essex.

LARGE PEACHES (see pp. 173, 186).—We have read with interest the letter from Mr. F. G. Wicks (p. 173) with reference to Peach *Crimson Galande* and the note from Mr. C. Ruse (p. 186) in which he states that he has gathered a fruit of the variety *Peregrine* weighing 10½ ounces. *Peregrine* was raised from Spenser Nectarine by the late Mr. T. Francis Rivers. It ripens slightly earlier than *Crimson Galande*, has a firm flesh, is brilliantly coloured, and of excellent flavour. The variety belongs to the free-stone type, and is suitable for forcing or for growing out-of-doors. The tree grows equally well in India, California and many other parts of the United States. Mr. Rivers also thought highly of Peach *Duke of York*, which is earlier than *Peregrine*, and the three varieties raised by him, namely, *Duke of York*, *Peregrine* and *Sea Eagle*, would make a succession that should satisfy even the most critical grower. Thomas Rivers and Son, Sawbridge-worth.

LATE PEAS (see p. 203).—The writer of the most interesting contributions entitled "Confessions of a Novice" asks for advice on how to obtain a satisfactory crop of late Peas. My experience may be of some help to him, and it is that hope which prompts me to write. For my latest supplies this season I relied on the varieties *Selected Gladstone* and *Latest of All*. I have two rows of each sort, the rows being about 40 yards in length, and up to the date of writing (October 9) *Selected Gladstone* has yielded an abundant supply of pods. I only commenced gathering from *Latest of All* on the fifth of the present month, but with favourable weather, and from the excellent appearance of the rows, there is no apparent reason why the last-named variety should not continue to provide delicious Peas well into November. Our soil is on the light side; the situation is open and very favourable. This factor decided me when choosing the site. The ground was well trenched in February last, and enriched with a moderate quantity of well-decayed farmyard manure. The rows were made 6 feet apart. One row of the variety *Gladstone* was sown on June 10, and a second on June 18. Both rows of *Latest of All* were sown on June 27. The seeds were sown very thinly in shallow trenches, which I found of great benefit, as they facilitated copious waterings. Beyond a mulching of ordinary stable-yard manure, that is to say more straw than manure, the plants had no stimulant, nor do I think it advisable to feed late Peas, as heavy feeding only induces gross growth at the expense of the yield. In most cases when mildew appears it is due to the roots not finding sufficient food to keep the plants growing healthily, and in those circumstances an application of liquid manure is beneficial. But when all is said and

done, elaborate preparations made, and due precaution taken, there are many (and I number myself amongst them) who believe that a crop of Peas in October and November is more or less a matter of fortunate chance. If these notes are of any use to "Novice" I shall be more than repaid for writing, for there is no column in the *Chronicle* which so much cheers and induces the average gardener to take a more philosophical view of his many worries than the one entitled "Confessions of a Novice." Frederick W. Miles, Ware Park Gardens, Ware, Hertfordshire.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 12.—The fortnightly meeting was held on Tuesday last in the Vincent Square Hall, Westminster. The exhibition was equal to the average of these shows in autumn.

Two Gold Medals were awarded by the Floral Committee, and ten Awards of Merit were conferred for novelties, including three to Dahlias, which were awarded in conjunction with the National Dahlia Society's Floral Committee. The Orchid Committee awarded five medals to collections and two Awards of Merit to novelties.

The number of exhibits before the Fruit and Vegetable Committee was much smaller than on recent occasions, and the only awards made in this section were two medals for groups.

At the three o'clock meeting in the Lecture Room Mr. E. A. Bunyard gave an address on "The History of the Classification of the Apple."

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. John Green, W. P. Thomson, C. E. Pearson, W. J. Bear, W. G. Baker, G. Reuthe, C. Blick, Geo. Harrow, J. W. Moorman, W. H. Page, J. Dickson, Chas. Dixon, H. J. Jones, Chas. E. Shea, E. H. Jenkins, J. T. Bennett-Poë, W. Howe, J. Jennings, W. Cuthbertson, C. R. Fielder and R. C. Notcutt.

AWARDS.

AWARDS OF MERIT.

Gentiana species.—A pan of eleven beautiful blooms of an autumn-flowering *Gentian* was shown by Mr. AMOS PERRY, under the name of *G. ornata*. The tufts showed very little stem and leaves; the latter linear, dark green, pointed, and about 1½ inch long. The handsome flowers are of a rich, metallic, dark opal-blue, with a suspicion of purple in the throat. On the outside the petals are well defined by a broad, greenish-yellow band, with a definite blue line through the middle. The plant is to be referred to the Kew authorities for naming, as *G. ornata* was considered by the Committee a misnomer.

Crocus pulchellus albus.—A very refined variety, with small, milk-white flowers marked with gold colour at the base and stigmata of golden yellow. The cup is about 1 inch long and borne on a pale, slender stalk. Shown by Messrs. BARR AND SONS and Mr. G. REUTHE.

Aster Amellus Mr. Perry.—A variety with violet-purple flowers and a bronzy disc. The plant was a mass of flowers, of dense habit and relatively dwarf stature.

Scelopendrium vulgare plumosum Perry (see fig. 83).—A fine, crested variety of the native Hart's Tongue Fern, of vigorous growth, bearing dark green fronds that are beautifully divided along the margins, and with tasselled growth at the tips. These two were exhibited by Mr. AMOS PERRY.

Rubus Feitchii.—This plant was exhibited as a pot specimen, about 4 feet high. The main shoot bears numerous side branches, the whole having a graceful appearance, enhanced by the silvery-grey tone of stems and leaves. The shoots are spiny, and bear pinnate leaves about 2 inches long, with three pairs of pinnules, and ending in a small wedge-shaped lamina. Exhibited by Messrs. J. PIPER AND SONS.

Rose Mrs. John Foster.—The beautiful Hybrid Tea variety noted on p. 222

when shown at the last meeting. The blooms are very fragrant and of good shape, the colour being described by the raiser as rich vermilion. Shown by Mr. ELISHA J. HICKS.

Carnation Alice.—A Perpetual-flowering variety of beautiful soft pink colour, with wavy petals and stout calyx. The blooms are of good form, and the variety promises to rank as one of the best of the numerous pink sorts. Shown by Messrs. STUART LOW AND CO.

The following varieties of Dahlias were awarded the R.H.S. Award of Merit and the National Dahlia Society's Certificate:—

Dahlia Rainbow.—A Collette variety, with yellow centre, the shade deepening through terracotta to purplish-pink and fading to white at the tips. The collar is pale yellow. Shown by Mr. J. A. JARRETT, Anerley Road, London.

D. Anna Louise.—A Collette variety of vinous-red colour; a bold, well-shaped bloom. Exhibited by Mr. J. B. RIDING.

D. Leviathan.—A giant Decorative variety of bronze-buff or terra-cotta colour, with bronzy-purple shading. Exhibited by Mr. J. STREND-WICK.

CULTURAL COMMENDATION.

For spikes of *Eucomis punctata*, exhibited by REGINALD CORY, Esq., Duffryn (gr. Mr. A. J. Cobb).

GROUPS.

The following medals were awarded for collections:—

Gold Medals to HON. VICARY GIBES, Aldenham House, Elstree (gr. Mr. Edwin Beckett), for a collection of fruits from the shrubbery and pleasure grounds. The collection was the most striking of its kind we have seen, and embraced berries, hips, haws, Crabs, Quinces, nuts, Grapes and dry fruits such as siliques, capsules, pods and samaras. Nothing was finer than a vase of *Berberis vulgaris*, crowded with the scarlet berries. B. Wilsonae was also very fine, with berries a clear coral-red. The laevigatus variety of *Symphoricarpos racemosus* was a mass of white balls, and strikingly effective. Others noted were *Celastrus articulatus*, with small round fruits coloured pale-apricot. *Stranvaesia undulata*, with cymes of coral-red berries; *Crataegus melanocarpa*, with black haws; and *Vitis betulifolia*. Messrs. J. CHEAL AND SONS, Crawley, for Conifers in pots and sprays of autumn-tinted foliage. The Conifers were splendid specimens, the growth being very healthy and clean. The following is a selection of rare and choice species:—*Juniperus japonica alba variegata*, *J. drupacea*, *J. chinensis aurea*, *J. Sabina tamariscifolia*, a prostrate variety; forms of *Cupressus Lawsoniana*, including *Stewartii*, one of the best golden Cypresses; *C. filifera glauca*; *Bowleri pendula*, *Wisselii*, a dense, contorted grower and *Shawii*, a light-green, weeping variety; *Libocedrus chilensis*, a small plant in a pot with yellowish-green foliage and red stems; *Abies polita*; *A. nigra Doumettii*; *A. Hookeriana* with growth like a *Cedrus*; *Taxus baccata adpressa aurea*; *Pinus Balfouriana* with glaucous foliage and *P. Pinea*.

Silver-gilt Flora Medal to Messrs. H. J. JONES, LTD., Ryecroft Nurseries, Lewisham, for *Michaelmas Daisies*. This firm's exhibits are invariably well arranged, and the group on this occasion was exceedingly effective. At the back were large masses of such beautiful sorts as *Ryecroft Pink*; *Chas. Seymour*, silvery-mauve; *Sirius*, mauvy-pink; and *Henry Adams*, with long, upright spikes bearing a profusion of lavender-blue flowers.

Silver Flora Medals to Messrs. B. R. CANT AND SONS, Colchester, for *Roses*; Messrs. J. PIPER AND SONS, Bayswater, for a collection of ornamental shrubby species and climbers similar to their exhibit at the last meeting; Messrs. CARTER PAGE AND CO., London Wall, for Dahlias. This was an imposing exhibit, and well staged. Varieties of the large Decorative type were especially imposing, notably *Oriana*, pink; *Sulphurea*, a double, sulphur-yellow variety like a big Japanese *Chrysanthemum*, and *Phidias*.

Silver Flora Medals to Messrs. STUART LOW AND CO., Enfield, for a group of the salmon-coloured *Begonia Optima* and Perpetual-flowering *Carnations*; Messrs. H. B. MAY AND SONS,

Edmonton, for a collection of some sixty varieties of *Scolopendrium vulgare*. The plants exhibited great diversity of foliage. Some had densely crested fronds, others were beautifully crested; many had undulating margins, some were fimbriated, and still others, such as *Kelwayi*, were like a ball of moss. The following were very distinct: *ramo-cristatum*; *crispum aureum*, the pale-green fronds having undulating margins; *muricatum*, upright leaves with undulating margins, and very dark-green in colour. Of the crispum type: *muricatum*; *Robinsonii*, a medium-sized frond; *fimbriatum*, with very fimbriate margins; and *grande*, the lamina being 3½ inches across and beautifully waved. Rev. H. J. PEMBERTON, Havering-atte-Bower, for *Roses*; Mr. L. R. RUSSELL, Richmond, for ornamental trees, shrubs and climbers in pots; Messrs. W. CUTBUSH AND SON, Highgate, for an imposing floor group of *Michaelmas Daisies*; Mr. JOHN PIGG, Royston, for *Roses*; Messrs. DOBBIE AND CO., Edinburgh, for Collette Dahlias; and Mr. J. B. RIDING, Chingford, for Dahlias.

Bronze Flora Medals to Messrs. ALLWOOD

BROWN, Orchidhurst, Tunbridge Wells. This is a charming flower of an uncommon shade of yellow. The sepals and petals are clear primrose, with a golden tint, and the crimped labellum of a deeper shade of yellow, with dark-red lines at the base. The form is that of *C. aurea*, but the substance of the flower is improved by the influence of *C. Loddigesii*, one of the parents of *C. Armstrongiae*. The rose and purple colour of the parents is entirely eliminated.

SEEDLING COMMENDATION.

Odontoglossum Victory (*O. crispum* *The Baroness* × *Seedling unrecorded*), from Messrs. ARMSTRONG AND BROWN, Tunbridge Wells. A seedling having a one-flowered spike, one of the best and most perfect in shape of the new *Odontoglossums*. When grown into a strong specimen it may be expected to improve in every respect. The flower is large, the sepals and petals almost circular, or very broadly ovate, coloured mahogany-red, with an underlying orange tint and a shade of purple on the petals. Both sepals and petals have a broad white margin, showing a tinge of the purple which colours the reverse side. The crest is yellow.



FIG. 83.—SCOLOPENDRIUM VULGARE PLUMOSUM PERRY'S VAR.

(See Awards by the Floral Committee, p. 252.)

BROS., Wivelsfield, for Perpetual-flowering *Carnations*; Mr. AMOS PERRY, Enfield, for hardy flowers; Messrs. W. WELLS, Jun., Merstham, for hardy flowers; Messrs. W. WELLS AND CO., Merstham, for *Chrysanthemums*; Mr. ELISHA J. HICKS, Twyford, for *Roses* and fruits of *Rosa Moyesii*.

Bronze Banksian Medals to Messrs. BAER AND SONS, King Street, Covent Garden, for *Nerines* and species of *Crocus*; Messrs. G. AND A. CLARK, LTD., Dover, for hardy border flowers; Mr. G. REUTHE, Keston, Kent, for *Alpines* and border flowers; and Messrs. HARKNESS AND CO., Hitchin, for *Roses*.

Orchid Committee.

Present: Mr. J. Gurney Fowler (in the chair), Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, S. W. Flory, A. Dye, W. P. Bound, W. H. Hatcher, H. G. Alexander, W. Cobb, T. Armstrong, A. McBean, J. Charlesworth, Pantia Ralli, C. H. Curtis, R. A. Rolfe, and Sir Harry J. Veitch.

AWARDS

AWARDS OF MERIT.

Cattleya Ajax Primrose Dame (*Armstrongiae* × *Dowiana aurea*) from Messrs. ARMSTRONG AND

A CULTURAL COMMENDATION was awarded to Mr. COLLIER, gardener to Sir Jeremiah Colman, Bart., Gattton Park, for a fine plant of *Cattleya Browniae*, Gattton Park variety (*Bowringiana* × *Harrisoniana*), with two spikes of thirteen and fourteen flowers respectively.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., Brackenhurst, Tunbridge Wells, showed a specimen of *Laelio-Cattleya Haroldiana* Monkholm variety, with very dark bronze-purple sepals and petals, and deep claret-purple lip; *Cattleya Venus* Fowler's variety, yellow, with a rose tint, and handsome lip, the front lobe of which is magenta crimson; *Odontonia Brugensis* var. *Eileen*; and a pretty seedling *Loelio-Cattleya*, a cross between *L.-C. St. Gothard* and *C. Empress Frederick*.

R. G. THWAITES, Esq., Chessington, Streatham (gr. Mr. Hannington), showed *Cattleya Venus* Her Majesty, a very fine flower, with light olive-green sepals and green petals, freckled with cream colour. The lip is bright red. Also the new *Odontioda Vulcan* (Odm. *Clytie* × *C. Noezliana*), in colour dark red.

Dr. MIGUEL LACROZE, Roehampton Lane, Roehampton (gr. Mr. Creswell), showed a group of

Odontoglossum grande, in which twenty-four good, well-flowered specimens were arranged, showing the plant at its best. (Silver Banksian Medal.)

Messrs. CHARLESWORTH AND CO., Haywards Heath, were awarded a Silver Flora Medal for a group of finely flowered Orchids, among which were noted the rare *Catasetum Randii*; *Dendrobium Phalaenopsis Rothschildianum* (white, with pink veins on the lip); *Brasso-Cattleya* Queen Alexandra; *Laelio-Cattleya Colmaniana*; *L.-C. Serbia* (*L.-C. St. Gothard* × *C. Enid*), a pretty new hybrid; a selection of handsome *Odontoglossums*; and, in the centre, a specimen of *Odontioda Cooksoniae*, with four spikes of brightly coloured flowers.

Messrs. SANDER AND SONS, St. Albans, were awarded a Silver Flora Medal for a well-arranged group, in which was a selection of their fine strain of *Cattleya Mantinii* and some other showy hybrid *Cattleyas* and *Laelio-Cattleyas*. Some novelties were *Laelio-Cattleya Balmoral* (*C. Hardyana* × *L.-C. Bella*), the colour being that of a good *C. Hardyana*, but with a more expanded labellum, and *Cypripedium Gloria* (*Gaston Bultel* × *Priam*), a large flower of fine substance, resembling *C. Gaston Bultel*. Interesting species of the "botanical" Orchids were also included.

Messrs. STUART LOW AND CO., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group in which *Vanda coerulea*, *Oncidium varicosum* and other Orchids were effectively arranged. A dark scarlet *Sophrone-Cattleya*, *Doris*, was specially good.

Messrs. HASSALL AND CO., Southgate, secured a Silver Banksian Medal for a pretty group in which *Cattleya Sybil* (*iridescent* × *Dowiana*) exhibited good forms, the best being shaped like *C. Dowiana*, with nankeen-yellow sepals and petals and ruby-purple lip. Good plants of *Phalaenopsis Esmeralda* and various *Laelio-Cattleyas* were also noted.

Messrs. FLORY AND BLACK, Orchid Nursery, Slough, showed a good form of *Cattleya Peetersii*, a specimen of *Coelogyne Mooreana*, and one of *Laelia pumila alba*, with unusually large flowers.

Fruit and Vegetable Committee.

Present: Mr. Jos. Cheal (in the chair), Messrs. A. R. Allan, Horace J. Wright, E. A. Bunyard, Owen Thomas and Edwin Beckett.

A Silver-gilt Kington Medal was awarded to the BARHAM NURSERIES, Sussex, for a collection of Apples and Pears. The fruits were splendid specimens, and the Apples were remarkable for their rich colouring; *Emperor Alexander*, Devonshire Red, Mabbot's Pearmain, Adam's Pearmain, Blenheim Pippin, and Beauty of Waltham were all very highly coloured, and in other respects excellent. The culinary variety King Edward VII. was shown well. The large, solid green fruits have a slight flush of red on the side next the sun. Of Pears, Durodeau, Conference and Doyenné du Comice were represented by choice specimens.

A Bronze Banksian Medal was awarded to Messrs. H. CHAPMAN, LTD., Rye, for a group of Mammoth Capsicum, a variety with large, dull-red berries.

Scientific Committee.

SEPTEMBER 28.—Present: Mr. E. A. Bowles, M.A. (in the chair), Drs. Voelcker and Horne, Messrs. Allard, Fraser, Rolfe, Odell and Chittenden (hon. secretary) and Mrs. Lloyd Edwards (visitor).

Saxifraga × *Hausmannii* var. *Trevor*.—Mrs. LLOYD EDWARDS exhibited a specimen of this hybrid *Saxifraga* which had been raised by crossing *S. mutata* with *S. aizoides atrovirens*. It has an erect raceme of flowers about 9 inches high, each flower being about half an inch in diameter, with narrow orange-coloured petals. The leaves form distinct rosettes. A Botanical Certificate was unanimously recommended for this plant.

Polygonum dumetorum.—Mr. J. FRASER showed specimens of *P. dumetorum* which he had collected at Woodham, Surrey, remarking that it occurred in hedgerows as a rule, and

soon disappeared, as it germinated only where bare patches occurred.

Salsola Tragus.—Dr. VOELCKER showed this weed, which had appeared in some fields of Lucerne grown from American seed. It is a native of Europe, and fairly widely distributed with cultivated plants.

Davidia involucrata.—Mr. E. A. BOWLES showed fruit of *Davidia involucrata* from a tree in Mr. Christie's garden at Framlingham Pigot, Norfolk, in the open. It is not certain that the seeds were properly formed.

Potatos "blind".—Dr. HORNE reported that he had examined the Potatoes sent to the last meeting and considered that the failure to produce sprouts might be due to several causes:—

(1) Some fungus operating in the field. *Phytophthora infestans* itself may cause "blindness" through invasion and ultimate destruction of tissue at the eyes. Such tubers frequently escape attention in sorting, and if stored, which very frequently happens, not only carry over the fungus, but fail to germinate or produce weakly plants.

(2) Cultural conditions. Improper conditions in the store, causing deterioration of the tubers and rendering the eyes useless. This would include overheating in pits after being lifted, the overheating killing most of the eyes.

(3) Attacks of fungi and bacteria owing to conditions of storage unfavourable to the tuber.

(4) Attacks of aphides, or subsequently destroyed by fungi and bacteria in store.

(5) Varietal causes—the so-called "won't grow" disease—e.g., in the variety President. When grown at Wisley, many tubers, although possessing apparently healthy eyes, failed to germinate or germination was greatly retarded in them (see *R.H.S. Journal*, Vol. xxxix., p. 595).

Judging by the condition of the specimens sent, the trouble in this case was probably due to either the second or third suggested cause.

Potato disease.—Dr. HORNE also drew attention to the erroneous belief which is somewhat prevalent that the fungus *Phytophthora infestans* travels down infected stems to the tubers below, whereas the usual sources of infection of tubers are the spores produced on the leaves.

Curious result of inarching.—Mr. THOS. SHARP, of Westbury, sent a photograph and specimens of Grapes from a scion of Muscat of Alexandria inarched upon a Black Hamburgh Vine. The larger bunch sent was from a lateral arising at the point of inarching, the smaller from much higher up the scion. The bunch from the point of inarching gave a better "set" than the other bunch, many of the berries departed from the shape of the Muscat, and they were nearer ripening than those of the smaller bunch, although subjected to the same treatment. The inarching was effected some years ago, and the same result has been seen in former years.

Euonymus japonica with roots on stem.—Colonel Sandeman sent a shoot of *Euonymus japonica* with a dorsiventral appearance, many roots growing from the side of the stem away from the light, similar to those produced by Ivy.

Fremontia californica fruiting.—Mr. C. D. LANGWORTHY, of Claygate, sent fruits of *Fremontia californica* from his Claygate garden, where it is growing on a clay soil.

Lotus Tetragonolobus.—Lady Lawrence sent plants and green fruits of this old garden plant under the name of "Asparagus Peas." It is figured in the *Botanical Magazine*, t. 151, and its curious four-winged fruits and deep red flowers secured it a position in gardens even before Parkinson's time. It has been used as a vegetable for many years in different parts of the country (especially, Miller informs us, in the north), and Lady Lawrence sends the following recipe for its cooking, the pods being cooked whole:—"Boil twenty minutes in salt and water, with a pinch of soda; strain off and put into a saucepan, with the following sauce: one tablespoonful of cream, a pinch of salt and pepper, and a small piece of butter. Cook for ten minutes."

Cleodendron ugandense.—Lady Lawrence also sent this fine bluish-flowered shrub, which

had been planted out in her garden at Burford in May last, and was now flowering profusely.

Pitcairnia albucaefolia.—This uncommon plant was sent in flower by Lady Hechester from Abbotsbury.

EXHIBITION OF BRITISH-GROWN FRUITS.

(Concluded from page 238.)

DIVISION VI.

SINGLE DISH CLASSES—COOKING APPLES.

Alfriston.—Only one competitor—Mr. A. SMITH, The Convent, Roehampton—sent an exhibit of this variety, which gained the 1st prize. *Annie Elizabeth*.—There were two exhibits of this variety. The 1st prize fruits shown by F. J. B. WINGFIELD DICBY, Esq., were well coloured. *Beauty of Kent*.—The one exhibit of this variety was that of F. W. PLATT, Esq., Ken View, Highgate (gr. Mr. C. Turner), to whom the 1st prize was awarded. *Bismarck*.—There were two good dishes of Bismarck, the better being that of E. E. PEARSON, Esq., who showed fruits of large size and very good form and colour. *Blenheim Pippin*.—There were six exhibits in this class, most of them very meritorious. E. G. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), gained the 1st prize. *Bromley's Seedling*.—It was surprising to see only two exhibits of this variety. The 1st prize dish was staged by E. E. PEARSON, Esq., whose fruits were well mellowed and of good shape. *Crimson Bramley*.—Of this variety there was only one exhibit, from Mr. J. A. STEDSTON, to whom the 1st prize was awarded. *Dumelow's Seedling* (Wellington, or Normanton Wonder).—Of the two exhibits of this Apple the one from Major ST. MAUR was considerably in advance of the other, and was awarded the 1st prize. *Ecklinville Seedling*.—Of this variety there were two exhibits of fairly equal merit, the 1st prize being gained by E. G. MOCATTA, Esq. His fruits were well grown and remarkably free from blenish. *Edward VII.*.—Major ST. MAUR was successful in gaining the 1st prize for this variety, with six good specimens. There was only one other competitor. *Emmett Early* (or *Early Victoria*).—There was only one entry for this variety, sent by ISAAC LEWIS, Esq., and it was awarded the 2nd prize. *Emperor Alexander*.—There was a large entry for this popular variety, and the standard of quality was high. The 1st prize was awarded to Major ST. MAUR. *Encore*.—Only one dish of this variety was staged. This was sent by Mr. C. CROOKS, of Inpney, Droitwich, who showed six good specimens. *Gascogne's Scarlet*.—Five very creditable dishes of this variety were shown, the best being that of the Rt. Hon. J. W. LOWTHER, to whom was awarded the 1st prize. *Golden Noble*.—There were two entries for this variety, the 1st prize being awarded to E. E. PEARSON, Esq. His fruits were finely coloured and of good form. *Grenadier*.—In this variety also there were two entries, the Earl of Bessborough gaining the 1st prize. *Hambling's Seedling*.—The three dishes of this variety were all good. Major ST. MAUR gaining the 1st prize. *Hector Macdonald*.—Mr. THOS. SMITH, Coombe Court Gardens, Kingston Hill, showed the only dish of this variety, and was awarded the 1st prize. *Hormed Pearmain*.—There were three entries for this variety, the 1st and 2nd prize dishes being especially good. The 1st prize was gained by F. J. B. WINGFIELD DICBY, Esq. *King of Tompkins County*.—The only exhibit of this variety came from J. B. FORTESCUE, Esq., to whom the 1st prize was awarded. *Lane's Prince Albert*.—There were no fewer than nine exhibits of this popular variety. The size of the fruits varied a good deal, but the standard of quality was on the whole fairly high. The 1st prize was awarded to T. O'DONNELL, Esq., for large and well-coloured fruits. *Lord Derby*.—There were five exhibits of Lord Derby, the size and quality being in most cases good. The 1st prize dish was sent by Sir MONTAGU TURNER, Bedford, Havering (gr. Mr. A. Humphrey). *Mère de Ménage*.—The only exhibit of this variety was sent by E. E. PEARSON, Esq., to whom the 1st prize was awarded. *Newton Wonder*.—There were four entries

for this variety, the standard being generally high. The 1st prize was gained by E. G. MOCATTA, Esq., for a very good dish. *Norfolk Beauty*.—Of the two dishes of this variety much the better was that of the 1st prize winner, J. B. FORTESCUE, Esq. *Peasgood's Nonesuch*.—The 1st prize was awarded to the Rt. Hon. J. W. LOWTHER for well-coloured fruits of pleasing form. *Potts's Seedling*.—There were six entries in this variety, and most of the exhibits were clean and of good quality. The 1st prize was awarded to the Rt. Hon. J. W. LOWTHER. *Revd. W. Wilks*.—The five exhibits of this variety differed very considerably, both in size and in colour, those in one dish being almost white and of small size, while the winning dish (that of Mr. F. L. PIKE, King's Langley) contained fruits of greenish-yellow colour, flecked with red, and about 5 inches across. *Royal Jubilee*.—There were only two exhibits of this variety, but both were of good quality. The 1st prize was won by the Rt. Hon. J. W. LOWTHER. *Stirling Castle*.—The only exhibit of this variety was sent by Mr. T. SMITH, Coombe Court Gardens, Kingston Hill. His specimens were very creditable, and were awarded the 1st prize. *The Queen*.—There were six entries in this variety; most of the specimens sent were well grown, but in some the colour left something to be desired. The 1st prize was won by the Rt. Hon. J. W. LOWTHER. *Tower of Glamis*.—Only one competitor—J. B. FORTESCUE, Esq.—sent an exhibit of this variety, and to him was awarded the 1st prize. *Warner's King*.—There were eight entries for this popular variety, and most of the exhibits bore evidence of good culture. The 1st prize was awarded to ISAAC LEWIS, Esq., for particularly well-coloured fruits. *Eight Fruits of Any Other Variety*.—Ten exhibits were staged, the 1st prize being awarded to Mr. A. SMITH, of The Convent, Roehampton, for a good dish of the variety Sandringham.

DESSERT PEARS.

Beurré Alexander Lucas.—Four competitors entered for this variety, the specimens being on the whole of good quality. The 1st prize was won by the Rev. M. McMURDIE, Woburn Park, Weybridge (gr. Mr. A. Basil), for very large and well-shaped specimens. *Beurré d'Amanlis*.—There were six entries for this variety, of very uneven merit, some of the fruits being somewhat poor. The 1st prize was awarded to C. H. BERNERS, Esq., Woolverstone Park, Ipswich (gr. Mr. N. Messenger). *Beurré d'Anjou*.—There were five entries for this variety, of a fairly high order of merit. The 1st prize was awarded to ISAAC LEWIS, Esq. *Beurré Bosc*.—Of the six entries in this class, three, though well shaped, were of small size. The prize-winning dish, that of the Rt. Hon. J. W. LOWTHER, contained really fine specimens. *Beurré Dumont*.—There were only two exhibits of this variety; the 1st prize was won by the Rev. M. McMURDIE. *Beurré Hardy*.—Of this favourite variety eight dishes were shown, mostly of good quality and appearance. The 1st prize was awarded to C. H. BERNERS, Esq., for excellent fruits. *Beurré Superfin*.—C. H. BERNERS, Esq., was also successful in gaining the 1st prize in this class, his fruits being much the best of the four exhibits sent in. *Blickling*.—There was only one exhibit of this Pear, that of F. J. B. WINGFIELD DIGBY, Esq., to whom the 1st prize was awarded. *Charles Ernest*.—Five dishes of this variety were entered. Some of the fruits were of particularly large size, but the 1st prize was awarded to the Rev. M. McMURDIE, for smaller, refined, and well-coloured specimens. *Comte de Lancy*.—Of the four dishes of this variety only one was of outstanding merit, that of C. H. COMBE, Esq., Cobham Park, Surrey (gr. A. Tidy), to whom the 1st prize was awarded. *Conférence*.—There were seven exhibits of this variety. Most of the fruits were of large size and good quality, the best being those of C. H. BERNERS, Esq., to whom the 1st prize was awarded. *Directeur Hardy*.—There were two exhibits of this variety, both of a high order of merit. The 1st prize was awarded to F. J. B. WINGFIELD DIGBY for fruits of excellent quality.

Doyenné du Comice.—Seven competitors exhibited, the specimens of the various exhibitors differing considerably from one another in colour and general appearance. The 1st prize was awarded to Mr. THOS. SMITH, Roehampton. *Durondeau*.—The merits of the six dishes of this Pear also varied considerably. The best dish was that of the Rev. M. McMURDIE, to whom the 1st prize was awarded. *Easter Beurré*.—The Rev. M. McMURDIE also gained the 1st prize for this variety. *Emile d'Heyst*.—There were four creditable dishes of this variety, the 1st prize being awarded to F. J. B. WINGFIELD DIGBY, Esq. *Fondante d'Automne*.—The standard in this variety was not very high. Only three exhibits were staged, the 1st prize being awarded to C. H. COMBE, Esq. *Fondante de Thiriot*.—In this class also there were three exhibitors; the 1st prize was obtained by the Rev. M. McMURDIE, whose specimens were of good size and well coloured. *Gloire Morceau*.—There were no less than seven exhibits of this Pear, but the quality was not generally high; the 1st prize was awarded to the Rev. M. McMURDIE, who had much the best fruits. *Joséphine de Malines*.—Seven dishes of this variety were staged, the fruits being chiefly of small size but fair quality. The 1st prize was awarded to F. J. B. WINGFIELD DIGBY, Esq. *Le Brun*.—This class was represented by three dishes, all well-grown fruits. The 1st prize collection (that of the Rev. M. McMURDIE) was extremely creditable. *Le Lectier*.—There were no fewer than ten exhibits of this Pear, the quality of most of the fruits being good. The 1st prize was awarded to Lord FOLEY, Ruxley Lodge, Claygate (gr. Mr. H. C. Gardner). *Louise Bonne of Jersey*.—There were eight dishes of this variety, the colour varying considerably. The 1st prize dish (that of C. H. COMBE, Esq.), contained fruits of good size and very satisfactory colouring. *Marie Benoist*.—In this class also there were eight exhibits, the 1st prize being awarded to Mr. C. CROOKS, Impney, Droitwich. *Marie Louise*.—There were nine exhibits for this variety, the 1st prize being obtained by the Rev. M. McMURDIE. *Nouvelle Fulvie*.—The 1st prize was awarded to Mr. A. SMITH, Roehampton, who showed the best exhibit of four. *Olivier des Serres*.—The four exhibits of this Pear were, on the whole, of good quality. The 1st prize fruits were shown by F. J. B. WINGFIELD DIGBY, Esq. *Pitmaston Duchess*.—This popular variety was represented by eight dishes of massive fruits. The 1st prize was awarded to the Rt. Hon. J. W. LOWTHER, whose specimens were particularly well shaped. *Santa Claus*.—Sir MONTAGU TURNER, Bedford, Havering, was the only competitor in this class, and was awarded the 1st prize. *Souvenir du Congrès*.—There were three exhibits in this class, the 1st prize being awarded to the Rev. M. McMURDIE for a dish of large, well-coloured specimens. *Thompson*.—There were four dishes of this variety of very uneven merit. The 1st prize was won by the Rev. H. A. BULL, Wellington House, Westgate-on-Sea (gr. Mr. F. King). *Triomphe de Vienne*.—There were six satisfactory exhibits of this variety, the best being that of the Rev. M. McMURDIE, to whom the 1st prize was awarded. *Winter Nelis*.—The six dishes of this Pear varied considerably in size. The best dish, for which the 1st prize was awarded, was that of F. J. B. WINGFIELD DIGBY, Esq. *Eight Fruits of Any Other Early Variety*.—There were a number of good fruits shown in this class, Marguerite Marillat being a variety chosen by several competitors. It was for this variety that the 1st prize was awarded to the Rev. M. McMURDIE. *Eight of Any Other Late Variety*.—Exhibits in this class were not quite so numerous, but there were several good exhibits. The Rev. M. McMURDIE was again successful in winning the 1st prize, this time with the variety Roosevelt.

SCOTTISH HORTICULTURAL.

OCTOBER 5.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on the 5th inst. Mr. Pirie, the president, was in the chair, and there was an attendance of seventy members.

Miss BURTON, New Saughtonball Gardens, Polton, Midlothian, read a paper on "The Brassica Tribe," in which she dealt with the cultivation of the various vegetables belonging to that group.

The exhibits were: New Chrysanthemum White Harrie (awarded a Certificate of Merit), from Mr. R. WILSON, Springbank Nursery, Musselburgh; collection of ornamental Gourds and Capsicums from the Edinburgh Public Parks Department, per Mr. M'Hattie (awarded a Cultural Certificate); various vegetables from Miss BURTON, to illustrate her paper; a bulb of Webb's Purple-top Mammoth Turnip, weighing 8lb. 6oz., from Mr. WM. ALLISON, Lauriston Farm, Davidsons Mains, Midlothian; wart disease of Potatoes, from Mr. WM. MURRAY, Ardenholm, Moffat.

NATIONAL SWEET PEA.

ANNUAL MEETING.

OCTOBER 11.—At the annual general meeting of this Society, which was held at the Royal Horticultural Hall, Westminster, on the above date, Mr. E. H. Christy presided over a fair attendance. After the minutes of the previous meeting were read and confirmed it was unanimously agreed to alter Rule 27 so that it should read: "Alterations, amendments, or additions to rules shall only be made at the annual general meeting, or at a special general meeting called for that purpose. Notice of intention to propose alterations, amendments, or additions to the rules at the annual general meeting shall be sent to the Secretary not less than twenty-one days prior to the first day of October each year."

The Committee's report for the year 1915 was then read and discussed, and, after some alteration, was adopted. The report recorded the excellent services of Mr. Reginald W. Christy, of Boyton Hall, Roxwell, who was appointed Trials Superintendent. Last season's trials were the most satisfactory in the history of the Society, all the plants being robust, even in character, and the ground free from weeds.

The Floral Committee met at Roxwell on July 8, and granted Awards of Merit to the following varieties: Dora, a bicolor, sent by Messrs. DOBBIE AND CO.; Margaret Fife, a blue variety, and Tea Rose, cream-coloured, from Mr. ALEX. MALCOLM; and Victory, a lavender-coloured variety, from Mr. ROBERT BOLTON. Fiery Cross, the brilliant variety which was reserved for the Silver Medal in 1914, was in good form, and quite true, and the Committee unanimously confirmed the award. None of this year's novelties were considered to be of sufficient merit to be reserved for the Silver Medal.

References were made in the report to the annual show, and to the outing, both events having been fully reported in the horticultural press, and to the loss which the Society had sustained through the death of Mr. F. W. Harvey, Editor of the *Sweet Pea Annual*. Chairman of Committee in 1914, and a member of the General Committee for many years.

Many members of the Society, including Capt. Vernon T. Hill, Major Martin F. Hitchens, Messrs. A. L. F. Cook, N. S. Thornton, B. Peyman and E. J. Gee, who are members of the Committee, are serving with His Majesty's forces. The Committee regretted to record that Major Cautley, D.S.O., had fallen in action.

The financial statement showed a serious loss in revenue during the present year, but this was anticipated by the Committee. The Chairman stated that there was a balance in hand of £13 5s. 8d., and that the Society held a good stock of staging and vases.

The customary votes of thanks were accorded to the retiring President, other officers, and committees. For the coming year Mr. E. W. King was elected President, and Mr. J. S. Brunton Chairman of Committee. The Superintendent of Trials, the Hon. Treasurer, and the Secretary were re-elected.

It was unanimously agreed to waive the rule which required members of the General Committee to make at least two attendances, in favour of the Service members, consequently they remain members of the General Committee. Four vacancies were filled by the election of Messrs.

A. C. Bartlett, G. H. Burt, E. H. Christy, and H. Cowley. The provincial corresponding members of the Committee were all re-elected, with the addition of Messrs. Robert Bolton and J. Malcolm. The election of nine members of the Floral Committee was made by ballot, and the scrutineers announced the election of Messrs. G. H. Burt, E. H. Christy, C. H. Curtis, Arthur Hallam, Andrew Ireland, Thomas Jones, A. Malcolm, Thomas Stevenson, and T. A. W. Weston.

LAW NOTE.

ON Monday last a meeting of shareholders of the Agricultural and Horticultural Association, Ltd. ("One & All Seeds"), was held, and it was resolved to go into voluntary liquidation, the shareholders appointing their own liquidator. The total share issue is about £15,000, and the total deposits over £100,000.

Obituary.

CAPTAIN CHARLES ANNERSLEY ACTON.—We regret to learn from Sir Frederick Moore that Captain Charles A. Acton, late of the 2nd Battalion Royal Welsh Fusiliers, was killed in action in Flanders on the 25th ult. Captain Acton's garden at Kilmacurragh, Rathdrum, Co. Wicklow, is one of the most interesting in Ireland, and contains fine specimens of rare half-hardy plants, and the most complete collection of species of *Rhododendron*. A plant of *Embothrium coccineum* at Kilmacurragh is probably the largest in the United Kingdom. Many of the plants are referred to in Veitch's *Manual of Coniferae*, and several have been figured in the *Botanical Magazine*. Captain Acton retired from the Army on the death of his uncle in 1908, and devoted all his energies to the development of his estate and garden. He rejoined the 9th Battalion of his old regiment on the outbreak of war, and, as above stated, was killed in action on September 25. His brother, Captain Reginald Ball Acton, was wounded in Flanders in the early part of this year.

M. CHARLES MOLIN.—We regret to announce that this well-known nurseryman and seedsman, of Lyons, died recently at the age of 64.

M. HENRI CHANTIN.—The death is also announced of this French nurseryman, the last of the sons of M. Antoine Chantin, famous as a grower of stove and other plants.

WILLIAM SCORGIE.—The death took place at Springhill, Aberdeen, on September 29, of Mr. Wm. Scorgie, gardener, at the age of 64. Starting his career at the early age of nine years, the deceased could thus claim a connection with horticulture of over half a century. Before finally settling down in his native town Mr. Scorgie saw service in notable gardens, both in England and Scotland. He was a keen exhibitor, and his numerous prizes testify to his abilities in that direction. Of an affable and kindly disposition, he gained the respect and esteem of a large circle of friends. Six sons follow their father's vocation.

Fritz von DIPPE.—We learn from a trustworthy source of the death from wounds of Fritz von Dippe, the eldest son of the senior partner in the well-known nursery firm of Gebrüder Dippe, in Quedlinburg, Germany. He was only twenty-nine at the time of his death.

JAMES ALLEN.—The American journal *Horticulture* records the news of the death of James Allen, who died on August 17, aged forty-six years, at Tuxedo Park, New York. He was a native of Kent, but emigrated to America some years ago, where he became gardener to Mr. A. D. Julliard, at Tuxedo Park. He was a successful and proficient gardener.

PATRICK NORTON.—We also learn from *Horticulture* the information that Mr. P. Norton, a well-known horticulturist of Dorchester, Mass., died on September 9, aged seventy-six. Mr. Norton was born in Athlone, and was taken to America when still an infant. He was trained as a nurseryman, and was at one time superintendent of a large cemetery, leaving this position to enter a florist's business, in which he remained until his retirement.

ANSWERS TO CORRESPONDENTS.

"There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self."—*Gardeners' Chronicle*, No. 1, Vol. I., January 2, 1841.

BEGONIA UNHEALTHY: *Lads*. The plant is destroyed by eel-worm, which has established itself at the root. Burn all the plants which are similarly affected, and thoroughly sterilise the soil in which they were growing, or the disease will spread to other plants.

BRASSIAS FAILING TO FLOWER: *R. B. M. S.* You do not state what species of Brassia you refer to. Some species are not so free in flowering as others, but as a rule the plants grow well and bloom satisfactorily. The conditions in which your plants are grown and the treatment seems to be correct, and it is difficult to suggest what you might do to induce the plants to bloom. There is, however, a probability that if the plants were grown in baskets and suspended, or the pots in which they are growing hung by wires near the roof-glass, it might have the desired effect. Plants of this class kept continually in the same house sometimes fail to flower, and a change to a cooler and more airy house in summer when not actively growing is often beneficial.

CELERY DISEASED: *E. G. H.* The Celery is attacked by a fungus known as *Septoria petroselinii*. See reply to *D. R.* in our last issue, p. 240.

"COLLERETTE" **DAHLIAS:** *C. W.* Many of our readers have questioned this spelling of the word "Collette," but it is nevertheless correct. The word is a French one, meaning "little collar."

PELARGONIUMS FAILING: *W. A.* The injury is due to a maggot, which has burrowed into the stem from the collar. In order to prevent attacks in the future you should dredge a little guano around the base of the stem, which will deter the insect from laying its eggs.

GRAPES ATTACKED BY GLEOSPORIUM FRUCTIGENUM: *A. W.* If, as you suspect, your Vines are attacked by *Gleosporium fructigenum*, timely spraying with potassium sulphide—half an ounce to one gallon of water—may prevent further attacks next season. All affected fruit should be removed and burnt, and the spraying done two or three times before fruiting time. With regard to your query as to the advisability of planting fresh Vines, it is always better in case of disease to get rid of the old stock and start afresh in unaffected soil.

GRAPES SPOTTED: *W. L.* Your Grapes are not diseased, but are suffering from wrong cultural conditions. See answer to *Leeds* under "Muscat Grapes."

MUSCAT GRAPES AFFECTED: *Leeds*. No disease is present in your Grapes. The injury is due to an excessively moist atmosphere, the dampness in the air condensing on the fruits. Such a condition is frequently brought about by too great a difference between the day and night temperature, and also by lack of ventilation, especially early in the day. If you correct these errors, you will probably find that the trouble will disappear.

NAMES OF PLANTS: *F. B.* *Thlaspi arvense*.—*A. W. G.* We do not recognise the variety of *Kniphofia aloides*.—*J. Hayes*. 1, *Pinus Cembra*; 2, *P. parviflora*; 3, *P. Strobus*; 4, *Abies nobilis*; 5, *A. concolor*; 6, *A. grandis*;

7, *Sequoia sempervirens*; 8, *Abies Veitchii*; 9, *Cupressus Lawsoniana*.—*J. W. R.* 1, *Crataegus coccinea*; 2, *C. Crus-galli* var.; 3, *C. macracantha*; 4, *Praxinus americana*; 5, *Crataegus flava*.—*H. G. P.* *Salvia azurea* var. *grandiflora*.—*C. Benham*. *Coronilla Emerus*.—*N. D.* 1, *Artemisia lactiflora*; 2, *Eryngium bromeliaefolium*; 3, *Berberis stenophylla*.—*A. I. J.* *Clematis Nellie Moser*.—*J. D.* *Crinum Powellii*, a garden hybrid perfectly hardy in this country.—*J. D.*, *Norfolk*. *Brassia brachiata*.—*A. L. Woodhouse*. *Pyrus Aria*, White Beam tree.

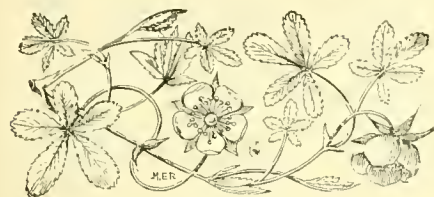
PEACHES, BOOK ON: *E. A.* We can recommend you the following varieties of Peach for planting: Waterloo, early, about July; Dagmar, ready in August; Hale's Early, middle of August; Crimson Galande, middle of August; Royal George, early September; Bellegarde, middle of September; Sea Eagle, end of September; Golden Eagle, end of September, or beginning of October; Princess of Wales, late September; Dr. Hogg, middle of August; Violette Hâtive, mid-September; Rivers' Early York, August. A very good book, and which would serve as a guide to you until the "Present-day Gardening" volume is ready, would be *The Book of the Peach*, by H. W. Ward, to be obtained from our publishing department at 2s. 9d. post free.

PEARS DEFORMED: *Enquirer*. The malformation of the fruit is not due to disease, but to some inherent defect in the tree itself. Such trees always bear fruit of this misshapen description, and should be rooted out, as nothing can be done to remedy the defect.

SILVER LEAF: *R. B.* There would be an element of risk in planting Apples in the ground on which the diseased Plums had grown, for silver-leaf disease affects not only Plums but many other kinds of trees, including Apples. You will find a general account of recent research into the disease in *Gard. Chron.*, Vol. LIV., August 9, 1913, p. 104, and also, in the same volume, p. 293, an account by Mr. E. Molyneux of experiments made by digging in, around the roots of silvered trees, sulphate of iron. In these experiments a trench was dug stretching for 6 feet from the base of the stem and 8 inches deep. As digging proceeded 6 lbs. of sulphate of iron (crystals) were scattered into the trench and among the roots. The new growth, though at first it showed signs of the disease, appears to have "grown out" of it and to have made healthy foliage.

SHALLOTS DISEASED: *D. M.* It will be as well for you to avoid growing not only Onions and Shallots, but any other members of the Liliaceae, on the ground affected by *Sclerotinia*. You may, however, plant other crops, such as Carrots, Turnips and Cabbages. In any case, you should clear away the diseased soil and thoroughly treat it with quicklime, meanwhile replacing it with fresh compost for the new crops. With reference to the state of the garden in general, it is not impossible that club-root should exist even where the soil contained a sufficiency of lime, for it is not a cure for the disease, only more or less of a preventive. The best treatment is to use lime and sulphur. Apply the lime now at the rate of 15 cwt. per acre and the sulphur 5 cwt. to the acre in spring. As regards the hydrochloric acid test for lime, we may remark that lime is so cheap and easy to procure that it is hardly worth while to test for its presence. It can be applied in several forms, such as chalk and old mortar rubble; but slaked lime is perhaps the simplest to apply. It can either be left on the surface or dug in; the latter is probably the better method.

Communications Received.—*T. S.*—*R. P. B.*—*L. P.*—*W. W.*—*T. C. B.*—*F. W. M.*—*C. W. O.*—*E. G. B.*—*J. R. L.*—"Violet"—*C. H. H.*—*W. H. W.*—*H. W. C.*—*G. C. S. F.*—*P. C. J.*—*G. Irish Gdng.*—*A. J. B.*—*A. D. W.*—*W. F. R.*—*H. S. T.*



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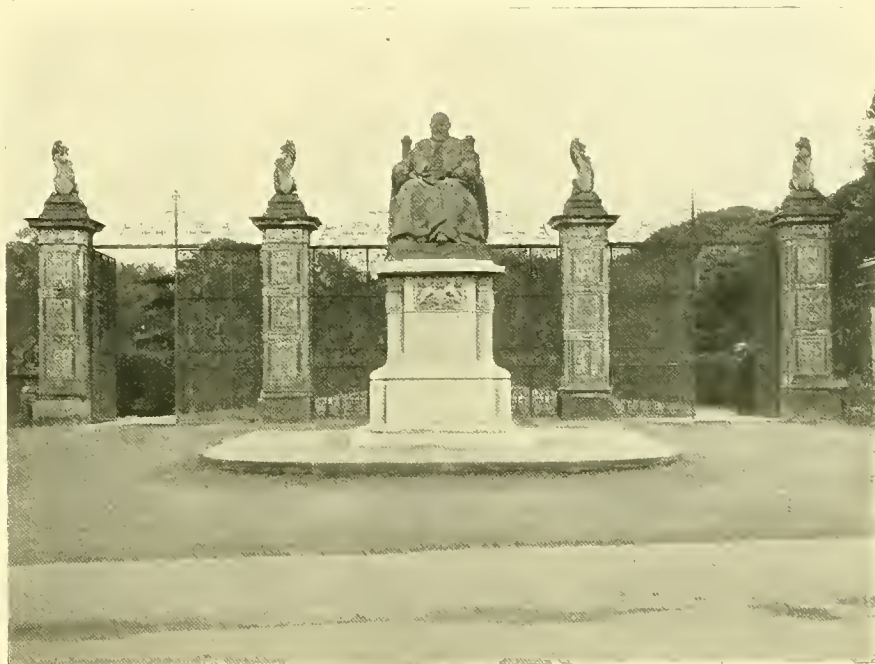
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HATFIELD.

IN his entertaining descriptions of the gardens of the British Isles, which occupy many pages towards the end of his *Encyclopaedia of Gardening*, Loudon says of Hatfield: "A magnificent Elizabethan mansion, in a finely diversified park watered by the River Lea, and containing some of the finest Oak, Ash, Elm, and other trees in the country. There were originally two parks, one for red and the other for fallow deer; and in one of them was a Vineyard, which was in existence at the time Charles I. was a prisoner at Hatfield. In 1795 a piece of ground, 17 acres in extent, was set apart for agricultural experiments, which are conducted with great science and assiduity by the marchioness." As soon as the visitor has passed the statue of the late Marquis of Salisbury, which occupies an imposing position just outside the magnificent gateway (fig. 84), he cannot fail to be impressed by the luxuriance of the woods mentioned by Loudon. On either side of the main approach, and especially to the left, across the open glade and beyond a treble-rowed avenue of Lime trees, the woodlands carry the eye along and seem illimit-

able. The "Lion Oak," now carefully preserved, shows that trees are no modern feature of the estate, for this Oak is many centuries old. To-day not much more than the shell of the trunk remains, and its canopy becomes smaller each decade, but it is 14 feet across at the ground line. But to the tree-lover it is fairly easy to reconstruct mentally this one-time giant of the forest, picturing it more than a hundred years ago in all the glory of its full beauty "standing in its pride alone," sheltering beneath its huge spreading limbs a whole herd of the red or the fallow deer. Further away from the mansion grows Queen Elizabeth's Oak, a fine and hale specimen under which, according to tradition, the Virgin Queen sat reading when news was brought of her accession to the throne of England. Nor are these Oaks all the old-time trees, for near to the residence there are Mulberries, now a trifle tottery and with gnarled moss-grown

the faintest recollection of any design, or even of the edgings of the many flower-beds. My memories tell of complete harmony both here and in the "scented garden" (see fig. 86); of a pleasant fountain, encircled by smooth, green grass, and surrounded by a wealth of flowers. Blue and mauve, most restful shades of colour, predominate. Delphiniums, in graceful spikes, and of true Delphinium colour: Anchusas, in graceful masses; the more lowly Linums, starred with widely opened flowers of sky-blue colour, and Phloxes bearing ample trusses of white-eyed mauve blossoms prevailed. But these tones alone would soon induce monotony, so the artist who arranged the beds included just the correct amount of yellow, of rose and of crimson, and did not forget the all-importance of white flowers, which must be present to make harmony in the garden. These colours were supplied by rich rose-coloured Can-



[Photograph by H. N. King.]

FIG. 84.—HATFIELD: THE EASTERN GATES.

trunks, which were planted by King James I., whilst near by are Spanish Chestnuts, which may well have been planted soon after the tree was introduced to this country.

The Lime avenue is best seen from the broad, gravelled carriage-front, whence the treble rows stretch away so far that their trunks become lost to view in the distance.

Feelings of rest and content are engendered in the West garden (fig. 85)—a most delightful old-world pleasure, bounded nearest the house by a pleached alley of Limes, which, feathered to the ground, provide ever-changing views of the old-fashioned flower garden. Here, as is right and proper, there is no attempt at formality. Although, after the lapse of over six months, I retain deep impressions of the charm and fascination of this enclosure, I cannot recall

dytuft, African Marigolds, salmon-coloured Sweet Williams, crimson Potentillas and Alstroemerias; whilst in the outer beds stately Hollyhocks added to the beauty and pleasure of the garden.

A more modern style of flower gardening is found on the opposite side of the residence, where flower-beds of geometrical patterns were filled with the "summer bedding" plants of the kind which have many admirers. Here—triumphs of cultural skill—grew pillars of Ivy-leaved Pelargoniums, wreathed with trusses of pink flowers, Fuchsias, of many sorts, scarlet Salvias and the like, rising above ample groundwork of tuberous and fibrous-rooted Begonias; scarlet, pink, and white zonal Pelargoniums and Violas. Both these formal gardens provided blazes of colour, which reflected the skill of the gardener, and illustrated a quite opposite style of planting to that of the West

garden. From the terrace the sharp outlines of a well-kept Yew maze are to be seen, but, as the Hatfield example of these tantalising things is said to be easier of entrance than of exit, discretion and the wish to spend the available time more profitably over-ruled the temptation to explore its intricacies. Of more interest to the gardener is the sunken garden adjoining Queen Elizabeth's Palace, although the latter fails to approach in size and dignity the building suggested by the sumptuous word. But, although it had fallen from its high estate these long years past, it has now been restored to somewhat of its former importance, and is to be used as a banqueting hall. Overhanging the sunken Rose garden (fig. 87) are some fine old Sweet Chestnuts and the ancient gnarled Mulberries planted by King James I.

The woodland walks are full of charm and interest. Tall, straight, clean-trunked Beech trees spread their pale green canopies over the gravel walks, providing many a peep and vista where may be seen large groups of Rhododendron, which in the spring and early summer brighten the scene with goodly trusses of many shades of colour. Long stretches of woods are margined with this indispensable shrub which

trees in the prime of life. Although the wood of Robinia Pseud-acacia was for a time in great request for spokes of motor-cars, when it seemed that Cobbett's eulogies would be confirmed, it has at present no great value in this country. But it is an ornamental tree of high rank, especially as seen at Hatfield, and it will thrive in poor soil.

THE GLASSHOUSES.

Few gardens possess such extensive ranges of glasshouses as Hatfield, where the skill of Mr. H. Prime is demonstrated in a wide range of subjects. During their various seasons luscious bunches of Buckland Sweet Water, Black Hamburgh, and rich amber-coloured Muscat of Alexandria Grapes may be seen hanging from short-jointed laterals in the many vineries. Pot Vines are an especial feature, and some which have apparently outgrown their pots now luxuriate in tubs. Melons are also grown in quantity and uncommonly well. Of decorative plants grown under glass, mention must be made of the Nerines, which bear stout, many-flowered spikes in the autumn; of large batches of scarlet Poinsettias (*Euphorbia pulcherrima*) and of *Euphorbia jacquiniæflora* and *Primula malacoides* for winter decoration; the quaintly beautiful

ORCHID NOTES AND CLEANINGS.

ORCHIDS IN MR. LEOPOLD DE ROTHSCCHILD'S GARDENS.

THE Orchid houses, both at Gunnersbury House and Gunnersbury Park, are devoted to batches of showy, decorative Orchids. Plants of *Vanda teres* produce hundreds of spikes of large rose flowers annually, and specimens of the white *Dendrobium formosum giganteum* have been grown and flowered there successfully from the seedling stage. Specimens of *Vanda coerulea* have flower-spikes in all stages. Hybrids raised by Mr. Hudson are in bloom, those noted being *Cattleya Chamberlainiana* (*Leopoldii* × *Dowiana aurea*) of a distinct type, showing more of *C. Leopoldii* than in the old form, the sepals and petals being greenish with a few purple spots and veining, the elongated lip reddish-purple; *C. Ashtonii* (*Warscewiczii* *Sanderiana* × *Harrisoniae*) of very fine quality, with flowers of a light rose colour, and orange-coloured centre to the lip; and *Laelio-Cattleya Cornelia* (*L. pumila* × *C. labiata*), with handsome flowers coloured like *L. pumila*, which is also blooming beside it, but twice the size. Mr. Reynolds has been as successful as usual with *Odontoglossum crispum*, *Sophranitis* and white *Masdevallia tovarensis*.

THE GARDEN IN AUTUMN.

"THERE is only one hardy autumn-flowering Cyclamen, and that is *C. neapolitanum*." I do not know whether this dictum of a great gardener would be accepted to-day. Certainly there seem to be great differences, both in leaf and flower, among my plants of Cyclamen now blooming in the open. Whatever their names, they are all alike bewitching, and even if they had no flower would be well worth growing for the beauty of their foliage. And then, again, they are so indifferent to ill-treatment and neglect, and if a corm be almost worn out a bed of old mortar seems to bring it round. On a north wall *Lapageria rosea* is coming into bloom, and in a south border, which is covered over with glass during the winter, *Lapeyrousia grandiflora*, *Nerine Bowdenii* and *Silene regia* are very attractive. *Gentiana Kurroo* in the same border has just ceased to flower, and is, I hope, setting its seeds, while *Gerbera Jamesonii* has given us its welcome flowers since May. In another bed is *Verbena chamaedryoides*; the colour would catch one's eye at a great distance, and if it proves as hardy as it is reputed to be, no better rock plant can be desired for autumn flowering. *Salvia uliginosa* and *S. chamaedryoides*, the first 2 feet or more high, with upright stems, the second of prostrate habit, will appeal to all who love blue flowers. Of Crocuses, *C. speciosus*, *C. medius*, *C. hadriaticus* and *C. pulchellus* are all delightful, but the last is my favourite. On the highest of all authority they should require good soil below them, yet by far the best group here is a cluster of some 6 or 8 bulbs, self planted, growing in the gravel path beneath nuts! *Convolvulus Cantabrica* is of an attractive pink, and has been in flower for months. I do not know that it is any prettier than our common field weed, but then, what could be? It does not ramble and will give no trouble, as does *C. althaeoides*. A *Convolvulus* for which I was given the name of *C. mauritanicus* is on sunny mornings worth a long walk to see; the colour is a very deep purple blue, the stamens being white (I thought the stamens of *C. m.* were yellow). *Gentiana barbata* Froel, or *G. detonsa*, as my edition of the *New Hand List of Herbaceous Plants* names it, is just out of bloom. Before it opens its flower this plant bears no resemblance to a Gentian.

More beautiful than any flower is the lacework of *Gossamer* on the grass, which seems to have borrowed the blue of the sky above. *A. C. Bartholomew, Reading, Oct. 15.*



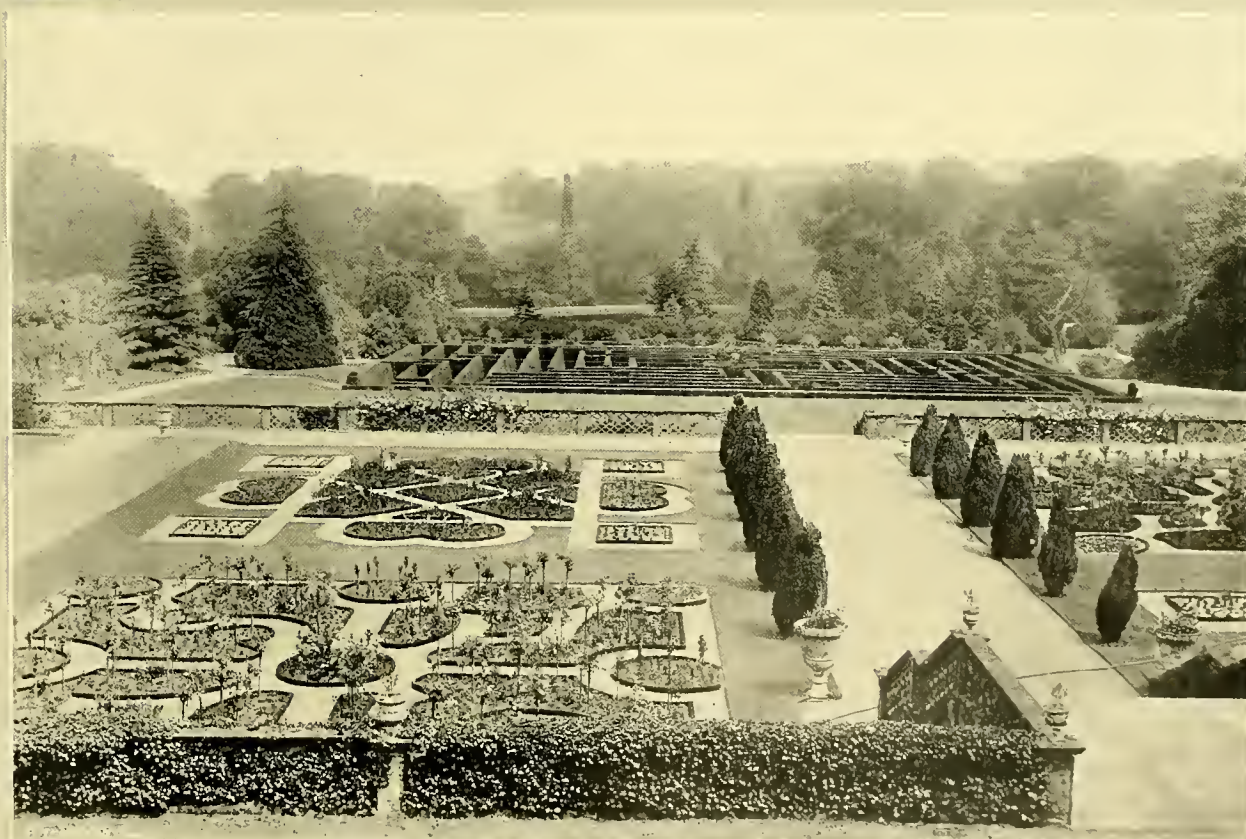
FIG. 85.—HATFIELD: THE WEST GARDEN.
(See page 257.)

[Photograph by H. N. King.]

flourishes at Hatfield. Many Bamboos are also used with good effect, and although none of the clumps or culms attains the record size of various species at Fota Island or Batsford, they are sufficiently large and possess much grace and beauty. The lover of shapely specimen trees would wish to linger in the Pinetum, which forms such a charming break in the woodlands. Here a large glade sloping gently from the path contains many specimens. The Weeping Fir of Nepal (*Picea Morinda*), bearing its characteristic long branchlets, which hang straight downwards and sway to the slightest breeze, is in complete harmony with the sacred Deodar of the Himalayas and that other hillside Conifer, *Pinus excelsa*. *Cryptomeria japonica* also thrives well, and several examples of *Araucaria imbricata* are very fair specimens. At one end there are magnificent Beeches, Spanish Chestnuts and Limes, besides several large old trees of Sycamore and Robinia Pseud-acacia, which latter in its old age makes a fascinating tree. The stout trunk and principal branches bear large longitudinal flakes of bark, which together with the sparse, pale green foliage are quaintly attractive. Such old specimens frequently flower well, but are not so fruitful as

flowers of *Gloriosa superba*, hanging from the roof of one of the stove houses, and, more uncommon still, large examples of *Erythrina corallina* in tubs. In the frames double-flowered Violets supply innumerable bunches of fragrant flowers; other frames contain successional batches of plants, and the overflow of Carnations from the houses devoted to this now indispensable flower.

The kitchen garden is an exceedingly pleasant place. As befits a large garden, the principal paths are of generous breadth, and when, as at Hatfield, the ground is pleasantly undulating, the kitchen garden is more than a utilitarian feature. The outdoor fruit gives evidence of similar skillful cultivation to that exhibited by the fruit grown under glass, and in favourable seasons the crops must be very large. The beautifully trained Morello Cherries and Peaches, for instance, have the abundant, almost wiry, shoots which ensure a plentiful fruiting; whilst the many cordon Gooseberries and rows of Pears primed basin-shaped, like the Kentish Filberts, give this garden a marked individuality. It is also interesting to record that Mr. Prime has found that Strawberries do best when planted annually; the runners are rooted early, fruited the next year, and then destroyed. *A. C. B.*



[Photographs by H. N. King.]

HATFIELD HOUSE, HERTFORDSHIRE, THE SEAT OF THE MARQUESS OF SALISBURY.



NOTICES OF BOOKS.

A BOOK ON DRUGS.*

No other book in the English language covers exactly the same ground as this one. It comprises an account of all the herbs in use in this country, with an explanation of their medicinal action, the diseases for which they are used in domestic practice, and their preparations and doses. Since the first edition was published changes have taken place, the demand for some herbs has decreased, or entirely ceased, and others have come into request. In the present edition the necessary alterations have been made so that the work represents all the herbs actually employed medicinally in this country at the present time. The additions made by Mr. E. M. Holmes consist of descriptions of the distinctive characters by which each herb may be recognised.

The botanical names and authorities have been brought up to date, and the old vernacular or popular names have been revised, so as to retain those found in herbals in use at the present day. The typographical errors, such as *Boldea* for *Boldoa*, etc., are very few. The herbs are arranged alphabetically, under the English names used in commerce, and an excellent index is given of both the botanical and vernacular names, the botanical names being printed in italics.

Few people, except those living in the Midland and Northern manufacturing districts, have any idea of the extent to which herbs are employed by the poorer classes, not only in domestic practice, but also to a very large extent in the form of herb beer and "Composition essence," used as a warming stimulant drink in the early morning on going to work in cold weather. In iron works where the heat is great, and thirst is constant, intoxicating drinks would be impracticable, but a slightly fermented herb beer can be drunk in any quantity, and acts as a slight tonic, whilst "Composition essence" improves the circulation in cold weather. Hitherto the herbalists who sell the herbs, not being, as a rule, expert botanists, have had no means of ascertaining if the herbs they sell are genuine. This they will now be able to discover, the distinctive characters under each herb being given in ordinary words as far as possible, and a glossary at the end of the work will enable the reader to ascertain the meaning of the few botanical terms the use of which cannot well be avoided. A further appendix gives in full the names of the authorities following the botanical names, and the reason for their use. It may be pointed out that a large number of the herbs in use, although abundant in Great Britain, have hitherto been imported from Germany in consequence of the more perfect organisation in that country, which enables the large German drug firms to offer these herbs, as well as their roots and seeds, at a price that has hitherto defied competition in this country.

Potter's *Cyclopaedia*, as representing the actual trade in medicinal plants in this country, is a work that deserves careful perusal by the Board of Agriculture. Every herbalist in the country might well use it as a herbal pharmacopoeia, and as it contains a description of all the vegetable drugs official in the British Pharmacopoeia, as well as those in use in pharmacy, but not included in that work, it should find a place in the library of every pharmacist. Gardeners will learn from it, probably with surprise, that many weeds they throw away are still used as herbs, such as Shepherd's Purse, Silver Weed, Selfheal, Goutweed, Fumitory, Clivers, White Bryony root, and even the common Groundsel, whilst several garden favourites, such as *Galega officinalis*, *Tiarella cordifolia*, and *Althaea rosea*, also find a place in the *materia medica* of the herbalist.

* Potter's *Cyclopaedia of Botanical Drugs and Preparations*. Second edition. By R. C. Wren. With additions by E. M. Holmes. Small 8vo, pp. 1-139. (Published by Potter & Clarke, 60, Artillery Lane, London.) Price 3s. 6d.

TREES AND SHRUBS.

CUPRESSUS CASHMERIANA.

I read with much interest Mr. A. Bruce Jackson's article on *Cupressus cashmeriana glauca*, in your issue of the 25th ult. I think that he and some other of your readers may be interested to know that I have in my garden four small specimens of the plant growing outside. Two of them have been out through the past two winters, and all appear to be thriving. This place is N.E. Derbyshire, and about 600 feet above sea level. I myself brought the plants to England when they were very small specimens, direct from Messrs. Rovelli's Nurseries, and I cannot think that the "Italian" Conifers are nearly so tender as they are reputed to be. *Cupressus funebris* has been growing here out-of-doors for four years; *C. sempervirens pyramidalis*, *C. macrocarpa guadeloupensis*, *C. bedfordiana*, *C. "Hills of India"*, *C. MacNabiana*, and several others are also established here. The only one that has failed is *C. Kamaon* (a seedling, I believe, from *C. cash-*

with the pyramids of red berries on *Crataegus Pyracantha*, the autumn tints of the different species of *Vitis* on pergolas, and clumps of the rose-flowered *Colchicum speciosum* and its white variety. *B.*

CONFESSIONS OF A NOVICE—V.

IN common with many people who cultivate a fastidious taste as well as flowers, I have long held Dahlias in aversion. I admit, of course, that, as a *tour de force*, contrived by art with the aid of Nature, the symmetry of the old double Dahlia is little short of miraculous. It represents the "dulness of complete felicity." I recognise, moreover, that the debt which horticulture owes to the skill of the old florists who created such things is profound, for it is to those florists more than to any other improvers of Nature that we owe our recognition of the supple plasticity of plants. Nevertheless, in spite of this grateful recognition, I never could persuade myself to grow—or try to grow—these triumphs of the Dahlia fancier's consum-



[Photograph by H. N. King.]

FIG. 86.—HATFIELD: THE "SCENTED" GARDEN.

(See page 257.)

meriana), and that was, I think, because it was grafted on an unsuitable stock. I am now growing the plant on its own roots from cuttings, and when big enough it will join the others in the garden. I have rooted about twenty cuttings of *C. cashmeriana*, but I noted when at Rovelli's Nurseries, about four years ago, that this firm was not growing *C. cashmeriana* from cuttings, but propagated it from grafts alone. If Mr. Bruce Jackson, or anyone else interested in Conifers, would care to see my collection, I should be delighted to show it, or to give any further particulars. William Arkwright, Sutton Scarsdale, Chesterfield.

THE BULB GARDEN.

CROCUS SPECIOSUS.

LARGE irregular masses of this charming blue Crocus planted on grassy banks beneath trees in Mr. Leopold de Rothschild's gardens at Gunnersbury are in full beauty and furnish vivid masses of colour, which harmonise effectively

mate skill. Of course, if you have once committed yourself to a denunciation, you must make it sweeping, and so some time last year I rashly expressed myself in the deplorable vernacular of having no use for Dahlias. The challenge was at once taken up by a grower in whose company I was, and he told me civilly enough yet firmly that the knowledge of a novice is naught. He had, moreover, a constructive mind, and concluded his castigatory remarks by a declaration that he would send me some of the newer kind of Collerettes and single Dahlias. In due course they came and were planted, and I am free to confess that I am deeply obliged to my friend for the soft answer wherewith he has turned away my needler's wrath. The plants have made wonderful growth, particularly in a sunny bed, into which peat had been dug for the comfort of Azaleas. The colours are charming and clear, and I know not which of the Collerettes I admire most, those with a self-collar or those in which the bright yellow of the inner ring of florets contrasts sharply with the red of the outer florets. In spite of the frost of the other day they are still flowering in profusion,

a pleasure to behold, and a double pleasure in that alone, or almost alone, of the flowers of my garden, they refuse to admit that summer is flown. It is not for a novice to offer advice, and no gardener is infallible, not even the youngest, yet I cannot but think that these sturdy plants, with their long upstanding flower-stalks and plenitude of flowers, deserve to be widely known and grown. The big catherine wheel doubles rivalling Absalom in symmetry which were growing in my neighbour's garden caught the frost severely, and have wilted and blackened. In recording this fact I am not insinuating that the Colletteres are harder than the doubles or Cactuses which he prefers. Nor do I mention his loss solely with the object of offering that decorous sympathy not wholly divorced from satisfaction which it is but natural to feel in the circumstances. My purpose is rather to ask some reader wise in meteorology to explain in general terms how it may be that frost should be so localised in its effects. In this case the Dahlias that were taken stood a little higher on a hill side than those that were left. In a garden a few feet lower than mine frost had also laid his black hand. The explanation, like

renewed the attempt. But now, having, like some gardening Heine, "out of my great sorrows made little songs," and having evoked an appreciation so discerning of the true purpose of these confessions, I shall, aided by Mr. Miles's instructions, make another effort to raise a dish of Peas in chill October.

FRUIT REGISTER.

APPLE EDWIN BECKETT.

HAVING seen this new culinary Apple for two seasons, and having tested more than once its cooking qualities, I am convinced that it will prove a useful addition to the list of cooking Apples. In appearance, the fruit is all that could be desired, being large, shapely, with just enough of colour to make it attractive, for much colour in kitchen Apples is deprecated by many traders in Apples. The individual fruits are solid and heavy, which are desirable qualities. In appearance I cannot call to mind any variety that it resembles; some may say Peasgood's Nonesuch, but from that it is quite dissimilar.



FIG. 37.—HATFIELD: THE ROSE GARDEN.
(See page 257.)

[Photograph by H. N. King.]

all explanations, is no doubt very simple, but I am free to confess that I have not yet been able to grasp it.

With respect to the late Peas, the worst has happened. They have simply ceased to do anything. The flowers remain and the pods begin to form, but even the jays have grown tired of waiting for them, and have taken to sampling the crimson fruit of the Crabs. The gardener is very nice about them, and, perhaps to heighten his ultimate triumph in their failure, holds out hopes that they may come yet; alternatively he recommends sowing in their place a row of Broad Beans in November, for he says that if sown then these plants do not get the fly as do those sown in spring. Now that I have learned that Broad Beans are excellent food, if only their skins be removed by plunging them in hot water before cooking, I shall follow his advice and avoid his later commiseration on the sore subject of the Peas.

Had it not been for the kindly note by Mr. Frederick W. Miles on the growing of late Peas (p. 252) I think that I should not have

OUT-OF-DOOR FIGS AT PENRHYN CASTLE

ONE of the finest Fig trees I have seen growing on an open wall is at Penrhyn Castle gardens. The tree of the variety Brown Turkey covers a south wall 14 feet high and 26 yards long. In the middle of September, when I visited Penrhyn, the tree was carrying a large crop of fruits. Six dozen handsome Figs were gathered on the morning of my visit, and the fruit was hanging in clusters of half-a-dozen. The quality was all that could be desired, for the large, deep brown fruits are of delicious flavour. The method of training the trees adopted by Mr. Speed differs from that usually practised. Each branch is trained quite six inches apart. In this way the leaves do not overlap, and thus the wood becomes thoroughly matured. The roots, too, are kept within bounds, and the tree is never allowed to suffer for want of water, especially during the months of July and August, when the fruit is swelling. *E. Molyneux.*

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

ORCHARD HOUSE.—Late Pears and Apples are cleared of their fruit, and the trees should be plunged out-of-doors in a bed of ashes. As an extra protection against frost, cover the tops of the pots with dried Bracken Fern or similar material. Specimens that need repotting should be attended to at once. The rest should be top-dressed, removing as much of the top soil as possible without injury to the roots. Fairly dry compost should be used, and be rammed down firmly. The present is a favourable time for potting young trees for the orchard house. The roots should be shortened to allow the trees to be placed in pots of, say, 10 inches in diameter. The soil best suited to the majority of fruit trees is a fairly heavy loam, mixed with a suitable quantity of old lime rubble, bones and soot. Each pot should be provided with liberal drainage material. Work the compost carefully amongst the roots, and ram it firmly. Provision should be made to protect the trees from birds, which would cause great damage to the buds.

VINERY.—Houses containing late Grapes must be kept dry. A little fire-heat will be beneficial at night, and also during the daytime in damp and foggy weather. The bunches should be frequently examined, and decayed berries cut away. In houses where the bulk of the bunches have been gathered the remainder should be cut, the stems placed in bottles of water and stored in the Grape-room. The shoots should then be shortened. If necessary the house may be used for a time for housing pot plants. The outside borders should be covered with a liberal coating of dry leaves and litter. In excessively wet districts it may be necessary to supplement this protection by wooden shutters or spare sashes. If ripe Grapes are required in May from permanently planted Vines, pruning should now be completed, and the vinery prepared for starting early in November. Fire-heat must not be employed at this stage. If the soil in the border is found, after testing, to be in a fairly moist condition, watering is not necessary until the Vines have made a certain amount of growth. If, however, the border is dry, moisten it with a moderate quantity of tepid water. On no account should the soil be made sodden at this stage, for it will be some weeks after the Vines have been started before there is much root action.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

MAXILLARIA.—These Orchids may be grown in pots or fairly deep pans, excepting perhaps *M. Sanderiana*, which should be planted in a Teak wood basket, suspended near the roof-glass of the intermediate or Cattleya division, for the flower-scapes grow decumbent or semi-erect, and show to advantage when hanging from the receptacle. A few species, such as *M. sanguinea*, *M. meleagris* and *M. tenuifolia*, have ascending rhizomes upon which the pseudo-bulbs are borne, and for this reason a slight difference must be made in their cultivation. A piece of Tree Fern stem or similar material should be placed in the centre of a pot, made firm at the base, and the rhizomes tied or pegged to the Tree Fern, working in a little compost as the potting proceeds. Such species as *M. grandiflora*, *M. picta*, *M. rufescens*, *M. striata* and *M. venusta* may be grown in ordinary flower-pots. Most Maxillarias thrive in the intermediate house, but a few, of which *M. nigrescens* may be cited as an example, will give good results if grown in the cool division. The receptacles should be filled one-third of their depth with drainage material, which should be covered with a thin layer of Sphagnum-moss to ensure a free passage for water. The rooting medium

should consist of one-half *Osmunda-fibre*, the remainder of *Sphagnum-moss*, broken Oak leaves, peat and crushed crocks. Make the compost fairly firm, and keep it below the rim of the pot. With such a varied class of plants no definite period can be stated for repotting, but each specimen must be treated individually. In common with all Orchids, the soil should not be disturbed unless root action is evident. After repotting, afford water with extra care until the plants are rooting freely, when the supply of moisture may be liberal, and the soil kept moist till the new growths are fully matured. When this stage is reached a moderate quantity of water will suffice to keep the plants in a healthy condition. Most *Maxillarias* grow wild in shady places, therefore during the hottest months of the year they should be protected from strong sunlight. The ventilators in proximity to the plants should be opened more or less on all favourable occasions.

SCUTICARIA.—Two species of *Scuticaria* are in cultivation—*S. Hadwenii* and *S. Steelii*. The former requires an intermediate temperature, and the latter a warm house. The sub-terete leaves are pendent, and the plants should be grown on a raft or a shallow, Teak-wood basket, with a small quantity of fibre and *Sphagnum-moss* placed thereon. The plants should be suspended near the roof-glass and well supplied with water during the growing season, but when the growth is completed only sufficient water should be afforded to prevent the leaves from shrivelling. These Orchids should be shaded very lightly from strong sunshine.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

WALL AND ESPALIER TREES.—It will soon be time to commence the work of winter pruning. Although to all appearance the wood is already well ripened, the leaves are still firmly attached to the trees. The foliage must not be dislodged by rough handling or brushing with a birch-besom, as is too often done by the inexperienced, but allowed to drop naturally; otherwise the buds will be improperly matured and the trees suffer in consequence.

GATHERING AND STORING FRUITS.—Most varieties of Apples and Pears are ready for harvesting, and should be gathered before autumn gales occur. Late varieties of both Apples and Pears are fit for gathering when the pips change from a white to a darker colour. Gather the fruits carefully by hand, and neither allow them to fall of their own accord nor to be shaken violently from the trees. They should be picked, whether from wall, espalier, or standard trees, one by one, and carefully put into baskets. The trouble of gathering them in this way will be more than counterbalanced by saving the fruit from bruises, which, with the majority of them, would mean rapid decay.

ROOT-PRUNING.—Such trees as require the operation may be root-pruned, commencing with Peaches and Nectarines. An indication that this operation is necessary is that the trees—and especially young ones—have made a superabundance of strong, sappy growths. Take out a trench and search well under the ball for roots growing in a downward direction. These deeply-plunging roots are usually of a gross nature and should be pruned severely. Strong roots growing in other directions should also be severed. Careful root-pruning of trees of any kind has a decidedly beneficial effect by encouraging the development of fibrous roots and bringing the trees into a condition of fruitfulness. If necessary, add a little fresh loam and lime rubble to the soil as the roots are relaid in position. Make the soil moderately firm as the work proceeds. If the soil is dry soak it with water to settle it about the roots and promote quick root action. In all cases see that surplus moisture can pass away readily, for without perfect drainage successful results cannot be expected. Moreover, a stagnant condition of the soil is a sure forerunner of canker or badly-ripened wood.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady Nunburnholme, Warton Priory, Yorkshire.

CHRYSANTHEMUMS.—Continue to thin the buds of late-flowering bush varieties, for, unless this is done, some of the best varieties will present a poor and ragged appearance. A knowledge of the extent of the thinning necessary can only be learned by experience; certain varieties will produce a large number of well-developed blooms without much disbudding. The pots are filled with roots which will need feeding: when manure water is used it should always be diluted to a moderate strength. Continue to feed the plants until the blooms are about half expanded, gradually decreasing the supply until it is discontinued altogether and clear water only used. At that stage root-waterings must be limited to an amount just sufficient to keep the soil moist.

EUPHORBIA JACQUINIAEFLOREA.—There are few stove plants that give such a long succession of flowers suitable for cutting during the winter as this *Euphorbia*. To have the plants at their best their development should be hastened by employing a brisk heat from the time the cuttings are rooted. In addition the plants must be given stimulants to an extent few other winter-flowering stove plants require. This is necessitated by the small root system entailing the use of small pots; consequently the soil, even when well enriched to begin with, soon becomes exhausted. If a night temperature of 65° is maintained, with a proportionate increase of warmth by day, the plants will continue to grow freely. The nearer the tops of the plants are to the roof-glass without actually touching the glass the better specimens will they make.

GLOXINIA AND GESNERA.—Old plants of *Gloxinias* resting in pots should be transferred to their winter quarters, the tubers being allowed to remain undisturbed. Any dry room where the temperature does not fall much below 50° will be suitable. Plants of late batches not yet defoliated should not be hurried to rest. Careful attention in such details as watering and affording a drier air for a few weeks will greatly improve the quality of the tubers. Summer-flowering *Gesneras* should be treated in a similar manner; some of these plants also may be late in flowering and must be treated accordingly.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD COBY, Esq., Duffryn Gardens, near Cardiff, South Wales.

DAHLIAS.—At the time of writing Dahlias are still very bright, but at any time they may be spoilt by frost or inclement weather, and the tubers should then be lifted and stored. If seed is required the heads should be gathered and dried. Seed should be saved only from those varieties possessing long, rigid flower stems, and other desirable qualities. Cut the plants to within a foot of the ground, and lift carefully the tubers with a fork. Wooden labels, with holes for suspending them by means of small brass or copper wire, are the best for labelling the plants, and at the end of the season they may be detached and securely fastened around the roots when stored. Remove the soil from the tubers, and thoroughly dry them in an open shed or some other convenient place. When dry, store the roots in a cool, frost-proof shelter, covering the tubers with dry sand.

HELLEBORUS.—Christmas Roses resent disturbance at the roots, and should only be transplanted in case of necessity. The present is the best time to plant *Hellebores*, which must be done without damaging the roots. If division is necessary, cut the rhizomes with a sharp knife, and separate the plant by means of two garden forks. Encourage the roots to grow by incorporating plenty of grit and leaf-mould in the soil, but do not place manure near them.

SWEET PEAS.—The last week in October is probably the best time for sowing seeds of Sweet Peas in pots to furnish plants for an early garden display or for exhibition. Three-inch pots, made thoroughly clean, should be

filled with a loamy compost, and three seeds placed in each receptacle. A shift into 5-inch pots will be necessary early in the New Year. Place the pots in a cold frame, and take precautions against mice eating the seeds. As soon as the seedlings are through the soil, the lights may be drawn off the frames, and, except to exclude frost and rains, should not be replaced at any time.

MONTBRETIA.—*Montbretia* corms increase rapidly, which necessitates their being transplanted every other year. Strong clumps exhaust the soil, which should be enriched by digging in plenty of well-decayed manure before replanting. Select corms which promise to give large flowers, and replant them a few inches apart, sprinkling around them some sharp sand. The small corms may be planted fairly thickly in well-prepared soil in the reserve garden, to grow to a flowering size next season. In cold, wet localities it may be advisable to store the corms in boxes of dry soil in cold frames, and plant in spring.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CUCUMBERS.—Plants intended for fruiting in winter are well advanced in growth. Keep the shoots regulated and stopped and remove all growth beyond what is necessary. Remove all rough leaves as soon as they show the slightest sign of decay or red spider and thrips will appear. Lightly top-dress the roots as soon as they appear through the surface, and never allow the plants to suffer from want of water. Weak liquid manure may be applied once a week to fruiting plants. Syringe the top growth once or twice daily, according to the state of the weather, and keep the temperature of the house at about 70° at night. Now is the time to plant Cucumbers with a view to producing a crop in January and February. The plants should be kept growing freely and never allowed to become crowded; the night temperature should be 65°. Top-dress the roots frequently with light soil. No fruits should be allowed to develop on these plants before the new year.

MUSHROOMS.—Continue to collect and prepare material for the making of fresh beds, and as there may be some difficulty in finding sufficient horse-droppings for the purpose, a quantity of well-prepared Oak leaves may be mixed with the dung. The leaves should be collected when they are dry and placed in a good-sized heap to ferment. They should be turned several times, so that they may become well sweetened before they are mixed with the horse-droppings. The leaves and the manure may be used in equal quantities. The bed should be about 15 inches in depth after it is made firm by ramming. Insert the spawn when the temperature of the bed is about 80°, and declining. Mushroom beds from which supplies are being gathered must not be subjected to too much heat or moisture, as such conditions are the cause of unsatisfactory crops. Instead of applying fire-heat, it is better to close the ventilators and doors and shut out as much cold air as possible. In these conditions very little water will be necessary; but when the surface of the bed near the ventilators is found to be dry, moisture should at once be applied to the litter. If a temperature of 50° is maintained the beds will continue in bearing for a long period.

CELERY.—The main crop of Celery should be earthed up at once, first removing all side growths and decaying leaves. Draw the foliage carefully together by the hand, tie it together with soft material and do not remove the latter until the soil has been placed in position. If the roots are dry soak the soil with clear water, for Celery must be kept moist below. Exercise care to keep the centres of the plants free from soil.

MUSTARD AND CRESS.—Make sowings of these salads frequently throughout the autumn in a slightly-heated pit. If only a small quantity is needed Mustard and Cress may be grown in boxes in a cool greenhouse.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would oblige delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the **PUBLISHER**; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the **EDITORS**. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 25—

Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, OCTOBER 26—

Roy. Hort. Soc. Coms. meet. (Lecture on "A Century of Floral Progress," by Rev. Prof. G. Henslow, M.A.)

FRIDAY, OCTOBER 29—

Devon and Exeter Hort. Soc. Show.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 47.5.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday, October 21* (10 a.m.): Bar. 30.1. Temp. 49°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—

Dutch Bulbs, by Protheroe and Morris, at 67 and 68, Cheapside, at 10.30.

MONDAY, TUESDAY, AND WEDNESDAY—

23rd annual sale of Nursery Stock at Milford Nurseries, near Godalming, by Protheroe and Morris, at 12.30.

MONDAY AND WEDNESDAY—

Rose Trees, Shrubs, Perennials, Bulbs, etc., at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.

WEDNESDAY—

Trade sale of Lilliums and Bulbs, by Protheroe and Morris, at 67 and 68, Cheapside, at 1.

THURSDAY—

Roses, by Protheroe and Morris, at 1.
Hollamby's 41st Annual Sale of Nursery Stock, at Groombridge, near Tunbridge Wells, by Protheroe and Morris, at 11.30.

FRIDAY—

Clearance Sale of Nursery Stock at Watford Nurseries, Watford, by Protheroe and Morris, at 12.

Classification of Apples.

It is a striking testimony to the difficulty of the subject that none of the numerous attempts to classify the varieties of Apple can claim complete success. Indeed, it is an open question whether these classifications would prove of any great assistance to the beginner who wished to become acquainted with and to remember the salient characteristics of the chief varieties of this fruit. Such an one would still have to travel much of the old empirical road, and to learn the names and characters one by one. Yet, as Mr. E. A. Bunyard pointed out in his recent lecture to the R.H.S. on "The History of the Classification of the Apple," a satisfactory classification would be of the greatest service to pomologists. By means of it rare sorts could be identified readily and confusion of nomenclature could be corrected. As the history of the subject shows, there is but little hope of our ever arriving at a natural classification, for such an one must be based on origins, and of the origin of many of our varieties of Apple we have but little certain knowledge.

Failing such clues to a natural classi-

fication the earlier pomologist endeavoured to supply artificial keys based on a relatively small number of characters. The first serious attempt of this kind was, according to Mr. Bunyard, that of Manger, who chose shape as the basis of his scheme of classification, and grouped Apples into those with round, elliptic, egg-like, cylindrical, flat, pointed, hyperbolic and parabolic shaped fruits.

A marked advance was made in 1797 by Christ, a clergyman of Kronberg, and in his system Mr. Bunyard recognises the great merit that it is an attempt to discover a means of classifying Apples, and not to fit Apples into a paper classification.

In this system certain types were chosen to represent the several classes. As these types Christ chose Calville, Reinette, Pippin, Pearmain; but he did not succeed in finding enough types, and his remaining classes are less satisfactory, namely, ribbed, flat, long-pointed and round.

Diel, physician and pomologist, further improved on the work of Christ, and his classification was yet further improved by Lucas, with the result that that now in general use on the Continent is the classification of Diel and Lucas.

Mr. Bunyard, whilst recognising Hogg's services to pomology, cannot admit that the classification of our English pomologist is satisfactory, based as it is on many minute characters, such as those of the tube, the position of the stamens, the shape of the cell, and the disposition of the sepals. Thus the problem of classifying Apples cannot be said to have been solved yet in a full and satisfactory manner. There remains a wide scope for those who have the requisite knowledge and leisure. The problem is a pretty one. Its solution requires wide knowledge and sound judgment, yet it should not prove beyond the powers of some of our experts. The essentials for success would seem to be the judicious choosing of the main divisions and the chief sub-divisions. If this were done the further divisions might well follow along the lines indicated in Hogg's classification. Whether a study of existing wild types would help towards this end it is difficult to say; but, in any case, the attempt to improve existing schemes of classification is well worth the making, and it is to be hoped that Mr. Bunyard's account of the history of the attempts which have been made will inspire some pomologist to take up the work. There can be no doubt of its value both to the fruit-growers of the present day and to their successors. For it is given to but few to have the time and opportunity to learn to know Apples one by one, and there are many who would take a greater interest in the fruit if there were some published classification which would help them to identify the fruits which they grow. In striking illustration of the utility of such classifications of fruit Mr. Bunyard mentioned the fact that in the Cherry-growing regions of Kent the same name often does duty in different orchards for totally different kinds of Cherries.

R.H.S. SHOW OF FORCED BULBS, 1916.—

The Royal Horticultural Society's annual competitive exhibition of forced bulbs for 1916 will take place on March 14 and 15 in the Society's Hall, Vincent Square, Westminster. The show will open on the Tuesday at 1 p.m., and on Wednesday at 10 a.m. The Council offers, subject to its general rules, prizes presented to them by an old friend of the Society, Mr. G. H. VAN WAVEREN, of Hillegom, in five classes for amateurs:—24 Hyacinths in 18 distinct varieties, 1st prize, £5 5s.; 2nd, £3 3s.; 3rd, £1 11s. 6d.; 12 Hyacinths, distinct, 1st prize, £3 3s.; 2nd, £2 2s.; 3rd, £1 1s.; 6 Hyacinths, distinct, 1st prize, £1 11s. 6d.; 2nd, £1 1s.; 3rd, 10s. 6d.; 6 pans containing Hyacinths, 10 roots of one variety in each pan. The blooms of each pan to be of distinctly different colour; the bulbs need not have been actually grown in the pans, 1st prize, £5 5s.; 2nd, £3 3s.; 3rd, £1 11s. 6d. The finest decorative display of Hyacinths to be staged on the floor, 1st prize, £5 5s.; 2nd, £3 3s.; 3rd, £1 11s. 6d. In Classes 2, 3 and 4 each bulb must be in a separate pot (size optional). Classes 2, 3, 4 and 5 must be all single spikes; no spikes may be tied together. Exhibitors may only compete in one of the Classes 2, 3 or 4. All bulbs must have been forced entirely in Great Britain or Ireland. Points will be deducted for incorrect names. Applications for schedules should be made to the Secretary, R.H.S., Vincent Square, Westminster, accompanied by a stamped addressed foolscap envelope.

NATIONAL CHRYSANTHEMUM SOCIETY'S SHOW.—

The annual exhibition of the National Chrysanthemum Society will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on November 11 and 12, 1915. The show will be open to the public on Thursday, November 11, at 12 noon to 5 p.m., and on Friday, November 12, at 10 a.m. to 5 p.m. The secretary is Mr. RICHARD A. WITTY, 72, Saver-nake Road, Hampstead.

SOUTHAMPTON AUTUMN FLOWER SHOW.—

The autumn show of the Southampton Royal Horticultural Society will be held in the Pier Pavilion on Tuesday and Wednesday, November 2 and 3. Horticultural produce will be sold from a stall for the benefit of the local funds of the British Red Cross Society, and on the evening of the second day there will be an auction sale in aid of this fund. The Committee will welcome gifts of flowers, fruit, vegetables and other produce for the purpose of the sales.

HELP FOR THE BRITISH RED CROSS SOCIETY.—

The Ludgvan Cottage Garden Society has forwarded the sum of £19 to the funds of the British Red Cross Society, being the profit made at the society's annual show on July 24 last. Donations of £11 10s. to the Johnstone and District Cottage Hospital, and £25 to the Renfrewshire Branch of the Red Cross Society, respectively, have been made by the Elderslie Horticultural Society, being the profits of the Society's annual show.

SALE OF AN OLD SCOTTISH NURSERY.—

A three-days' sale of nursery stock at Messrs. THOMAS KENNEDY AND Co.'s nursery, Dumfries, marks the end of this old-established firm, which dates back for 130 years or so. Some time ago the York Place branch of the business, including the glasshouses, was taken over by Mr. JOHN CROALL, formerly manager of this department. The stock at the Burnside Nursery was offered for sale on the 12th, 13th, and 14th inst., by Messrs. LYON AND TURNBULL, auctioneers. The attendance was very meagre and small prices were realised, much of the stock being passed over.

AGRICULTURAL TRAINING FOR DISABLED SOLDIERS AND SAILORS.—

The Departmental Committee appointed by Lord SELBORNE, under the chairmanship of Sir HARRY VERNEY, Bart., M.P., to consider what steps can be taken to promote the settlement or employment on the land in England and Wales of sailors and sol-

diers, whether disabled or otherwise, on discharge from the Navy or Army, has presented an interim report recommending that as an experiment fifty men who have been discharged from the Navy or Army owing to disablement should be given a course of training in an Agricultural College, with a view to obtaining for them permanent employment on the land, and, in the case of those proving specially capable, fitting them to become occupiers of small holdings. This recommendation has been approved by Lord SELBORNE and endorsed by the War Office, and the Treasury has agreed to place funds at the disposal of the Board of Agriculture and Fisheries to defray the cost of the experiment. It is proposed that the men selected shall be sent to the Harper Adams Agricultural College, Newport, Salop, and to the College of Agriculture and Horticulture, Holmes Chapel, Cheshire, where they will be provided with board and lodging and be given a course of training in agriculture and horticulture free of charge to themselves. No deductions will be made from their disability pensions. In the first instance the course will extend over one term of about twelve weeks, at the end of which time those men whose conduct and work have been satisfactory and who seem capable of succeeding as small holders, will be given a further course extending over two more terms, so that they may receive instruction in the whole cycle of agricultural and horticultural operations. Men who have been discharged from the Navy or Army on account of disablement, and who desire to receive this course of training, should apply at once to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, for a form of application.

WAR ITEMS.—Sergeant ERNEST FITT, of the 7th Bedfords, son of Mr. and Mrs. FITT, Frythe Gardens, Welwyn, Hertfordshire, was killed by shrapnel in France on the 2nd inst. His officer, in sending the sad news to his parents, stated that he was a promising young man, well liked by all his officers and comrades. Previous to enlisting in the Army in September, 1914, the late Sergeant FITT was employed as a journeyman in the gardens at Porters Park, Shenley.

—Private GILBERT A. MICHIE, 10th Cameronians (Scottish Rifles), has been killed in action. He was the fifth son of Mr. ANDREW MICHIE, nursery and seedsman, Alnwick, and formerly of Kelso.

—Private ROBERT GRANT, 1st Black Watch, has been killed in France. Prior to joining the Army he was a member of the gardens staff at Brocklehurst, Dumfriesshire.

—Mr. Dow, gardener, Seafeld, Ayr, has received information that his son, Corporal LAWRENCE DOW, 8th Gordon Highlanders, has been wounded in France.

—Upwards of fifty of the employees of the Parks Department of the City of Glasgow have joined the Army since the beginning of the war. Several have lost their lives in action and others have been wounded.

HENRI FABRE.—The celebrated entomologist, HENRI FABRE, who died recently in his 93rd year, was not only—to use VICTOR HUGO's phrase—the HOMER of insects, but an ardent botanist, as is indicated on almost every page of his admirable *Souvenirs Entomologiques*. Thus he describes therein in delightful style a botanical excursion to Mont Ventoux in August, 1865, made in company with Messrs. B. VEZLOT and TH. DELACOUR. Among his more popular works, written particularly for the young, are several volumes dealing with botany and agriculture, notably *Leçons à mon fils sur la botanique* and two volumes on the "ravageurs" and the "auxiliaires de l'agriculture."

AGE AND YIELD IN APPLES.—Some interesting records are published by Mr. MACCORN, Dominion Horticulturist (see *Canadian Horti-*

culturist, Vol. 22, No. 12, p. 282), on the relation between yield of Apples and age of tree. The McIntosh Apple comes into bearing the sixth year after planting at Ottawa, and yields 22 quarts of fruit; the yield increases up to the 19th year, when it is 7½ barrels, after which the yield diminishes slowly. The Duchess begins to bear in its 3rd year, and the maximum crop is reached in the 24th (8 barrels).

HORSE POISONED BY YEW.—An interesting legal question has been settled by the payment of £60 and expenses to a Kirkcudbrightshire farmer who brought an action against the minister and Kirk Session of the parish of Girthon and the heritors of the same parish. The ground of action was for loss through a horse being poisoned by browsing from a Yew in the churchyard which adjoined the field in which the horse was grazing, the branches overhanging the wall.

HOPS IN THE UNITED STATES.—The Board of Agriculture and Fisheries has received a report, dated September 27, from His Majesty's Consul at Portland, Oregon, stating that the Hop crop is now estimated in Oregon at 90,000 to 100,000 bales, in Washington at 35,000 bales, in California at 125,000 bales, and in the State of New York at 10,000 bales, making a total crop for the United States of 260,000 to 270,000 bales. It is estimated that there are about 5,000 bales in stock throughout the country from last season's crop. The prices then ruling were from 5d. to 6d. per pound, being considerably lower than usual owing to abnormal conditions.

POTATO DISEASE.—The Board of Agriculture and Fisheries, in its Monthly Report of October 1, states that the recent dry weather has arrested the progress of disease among Potatoes. In a large number of cases it was found that the disease affected the haulms without reaching the tubers. Most counties mention the existence of disease, though it does not appear on the whole to be more prevalent than usual. The Potato crops are expected to be about 1 per cent. below the normal.

HOUSE FLIES AND HORSE MANURE.—A valuable account of a simple means of preventing manure heaps from becoming breeding grounds for flies is published by M. E. ROUBARD in *Comptes rendus* (1915, 161, p. 325); see also *Pharm. Journal*, October 2, 1915. M. ROUBARD points out that horse manure is the chief breeding ground of the house fly, and that house-fly larvae are not found in the manure of cattle or pigs. The eggs are deposited in fresh stable manure which has stood not more than 24 hours. From each cubic metre of such a heap 10,000 flies may hatch, and this number may, under favourable conditions, rise to 35,000. Egg deposition occurs only in fresh stable litter, saturated with urine, and it may continue outside the day after its removal, but not longer; fermentation preventing further eggs from being laid. The addition of substances such as borax, which reduce fermentation, may allow of egg-laying for another day or so. The larvae hatch out from the eggs and work their way to the surface, leaving the central portion before fermentation becomes vigorous. On or about the sixth day the larvae descend to the base of the heap, where they pupate. At this time the manure contains no more larvae, and no more eggs are deposited in it. Inasmuch as the centre of the heap, after the second day, reaches a temperature of 70°-90° C., and inasmuch as the larvae are very sensitive to heat, and also to the gases liberated during fermentation, it is easy to destroy them by burying the exterior portion in the middle of the heap. Experiments have shown that the house-fly larva is killed by an exposure of three minutes to a temperature of 51° C., and if it be subject both to this temperature and to the gases produced by fermentation, it succumbs in one minute. When the manure heap

is turned over the larvae which fall into the middle are killed instantly. To destroy the eggs, and so prevent the development of flies, all that is necessary is to bury the stable litter as removed in the centre of a fermenting dunghill instead of throwing it on the top.

LA SAINT-FIACRE.—In normal times in France the fête de Saint-Fiacre, celebrated on August 30, is the gardeners' holiday; but last year the fête was overshadowed by mobilisation and this year by the war. The legend of Saint-Fiacre, patron saint of gardeners, is well known. The saint was born in Ireland in the sixth century, and was the son of a king of Scotland. When twenty years old he left his country for France to seek a place of retreat, and found in the diocese of Meaux, not far from Paris, a little wood, Le Breuil, in which he built a hermitage. Near to this place is now the pleasant hamlet of St. Fiacre en Brie. The hermit sought permission of St. Faron, bishop of Meaux, to establish himself in the wood, and he received permission to take as much of the ground as he was able to enclose in one day by digging a ditch by means of a spade. The spade worked so miraculously that a great extent of ground was enclosed; so much indeed that a woman, La Becnaude, accused the holy man of sorcery. But the good bishop took the hermit under his protection, disciples joined him, the ground became a garden, and the hermitage a monastery wherein the sick and infirm received rest and care. Good St. Fiacre died on August 30, 670, and was buried in his oratory. His ashes were removed in 1568 to the Cathedral of Meaux. The monastery became a place of pilgrimage. The site is still known, though its remains have disappeared, but part of the land was bought and enclosed some twenty years ago, and on it was established an orphanage for children of agriculturists.

SPANISH ORANGE TRADE.—There has been a steady increase of late years in the production of Oranges in the Valencia district of Spain, due in part to new plantings, and in part to the progressive elimination of insect pests by the hydrocyanic fumigation process. Fresh markets are being developed, but they have not kept pace with production, and each year sees a larger prospective surplus. This surplus, however, has hitherto disappeared every year as the result of natural causes. The 1912 crop was destroyed by hailstorms before maturity to the extent of more than half a million cases, yet an ample supply of Oranges remained to meet a strong demand in English and other European markets, and to produce the highest export figures ever known. One-third of the 1913 crop was marketed in January, 1914, but the remainder was severely frost-bitten, leaving an actual shortage. The 1914 crop was said to be the largest of all, and was estimated roughly at 8,000,000 cases of 165 lbs. each for export. Severe frost in February, however, damaged about 1,500,000 cases, and was followed ten days later by cyclonic winds that further depleted the crop. The total loss may probably have reached 2,000,000 cases. The outbreak of war naturally disturbed the Orange trade to a great extent, and efforts were made to find a new market in America. The Government provided a tri-weekly steamship service from Bilbao to Falmouth in order to facilitate export to this country, but it was not successful, and was soon discontinued. Efforts were made to create a market in Spain itself, but railway rates are dear and transport slow in that country, and the result was very small. However, at the end of 1914 it was found that the shipments to the United Kingdom, the Netherlands and Scandinavian countries were above the average, while new trade with Italy and America so far compensated for the loss of trade with Germany, Austria and Belgium that the net decrease was only 83,000 cases as compared with the figures for 1913.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (L).

LES FRUITS AU MARCHÉ DE LONDRES.

L'APPROVISIONNEMENT de Londres en produits horticoles se poursuit à peu près normalement. Outre la production indigène, qui est particulièrement abondante à cette époque de l'année, et dont les arrivages n'ont pas subi le moindre arrêt, la plupart des pays importateurs continuent leurs expéditions.

La France est bien représentée par ses envois de Poires de table, parmi lesquelles les Doyenné du Comice occupent une place prépondérante. Leur qualité est excellente et ne semble pas souffrir des délais de transports. Grenoble envoie ses noix, et les premières Dattes de Tunisie sont déjà en route.

Les produits hollandais sont plutôt rares, ce qui est dû à la demande pour l'Allemagne et à la difficulté du transport par la Mer du Nord. Du Raisin Gros Colman en arrive, assez régulièrement, mais sa qualité est notablement inférieure à ce qu'elle était il y a quelques semaines; aussi ne parvient-on à en obtenir que quelques pence la livre.

Les Raisins de plein air sont de plus en plus abondants. L'Almeria blanc d'Espagne en barils arrive comme de coutume; d'autres Raisins, en caisses et d'aspect plus appétissant, sont envoyés de Lisbonne.

Les Pommes américaines ont fait leur apparition et les caisses de Californie, les barils de Nouvelle Ecosse commencent à remplir les locaux de Covent Garden. On prévoit cependant un déchet important dans les envois. De l'avis des importateurs il est probable que le gouvernement requerra de nouveaux bateaux pour les services de l'armée. Les transports de viande aux troupes en campagne nécessitent l'emploi de navires pourvus de cales réfrigérées; les compagnies assurant les envois de Pommes d'Amérique disposent d'une flotte lancée à une date relativement récente et pourvue de tous les perfectionnements de l'industrie frigorifique, et on croit que les réquisitions les atteindront. On ne disposerait dès lors plus du nombre de bateaux requis pour satisfaire à toutes les demandes des acheteurs.

En ce qui concerne les fruits du midi, Oranges, Citrons, etc., on présume que les envois ne subiront pas d'arrêt, parce que les bateaux qui y sont employés sont moins bien montés. Ils appartiennent généralement à des types plus anciens, sont beaucoup moins rapides et ne disposent pas d'installations frigorifiques, ce qui les rend moins utiles pour les services du gouvernement. En ce moment il arrive des Oranges du Cap, qui sont particulièrement appréciées parce qu'à cette époque les autres centres de production ne sont guère représentés au marché.

On peut se demander si les réquisitions de bateaux dont on prévoit l'influence sur l'approvisionnement des Pommes d'Amérique, n'exerceront pas d'effet sur les fruits du Cap, dont la saison doit commencer dans quelques semaines. Les bateaux qui y sont spécialement consacrés ont également des installations parfaites qui pourraient très bien convenir pour les transports militaires.

En ce qui concerne les fruits tropicaux la demande est très vive; les arrivages sont insuffisants pour des raisons qui n'ont pas de rapport avec l'état de guerre.

Si, d'une façon générale, la plupart des produits arrivent à peu près normalement, la clientèle est très nombreuse. Les produits de qualité moyenne se vendent plus chers qu'en

temps normal et cela parce que les classes ouvrières traversent une ère de prospérité sans précédent. Les salaires sont très élevés grâce surtout aux nombreux ateliers et usines travaillant à la fabrication d'articles requis par les armées. Il en résulte plus de bien-être, qui se traduit naturellement par une augmentation dans la consommation des articles de luxe et particulièrement des fruits.

Pour les produits de haut luxe, au contraire, une crise se manifeste clairement. La guerre restreint les dépenses dans le grand monde; il y a moins de réceptions, moins de dîners somptueux, et les fruits de toute première qualité ne se vendent qu'à des prix relativement bas. C'est ainsi que les plus beaux Muscats ne dépassent guère le cours de 18 pence la livre.

NOUVELLES DIVERSES.

LES COURS DES LÉGUMES À PARIS.—Le conseil municipal de Paris s'est occupé récemment de la cherté croissante des légumes frais. Il résulterait des déclarations reçues que l'augmentation n'est pas due à un défaut d'approvisionnement, mais aux prix élevés que les mercantis peuvent obtenir au front; peu leur importe en conséquence de payer eux-mêmes davantage aux maraîchers. Les détaillants ordinaires, s'ils veulent s'approvisionner, ont à accepter les mêmes conditions. Le conseil municipal préconise comme solution que les denrées vendues au front soient tarifées par les commandants de corps d'armée, de façon à maintenir des prix raisonnables permettant toutefois aux intermédiaires de réaliser un honnête bénéfice. On a tous ses apaisements en ce qui concerne l'approvisionnement des Pommes de terre et des légumes secs. Les arrivages sont cependant lents par suite de l'immobilisation, dans les gares, de nombreux wagons requis par l'autorité militaire. La semaine dernière les cours suivants étaient atteints pour les Pommes de terre, commerce de gros : Strazeele du Nord 140 fr., saucisse grise du Gâtinais 125 fr.; saucisse rouge du Gâtinais 130 à 135 fr.; Early, 103 à 114 fr., les mille kilos, sur wagon départ.

LE TRANSPORT DE PLANTES EN BELGIQUE.—Les Allemands ont annoncé récemment qu'ils abaisseraient les tarifs de transport pour les fruits et légumes belges expédiés en Allemagne. Pour les plantes non réunies en paquets ils ont relevé le tarif de 50 pour cent parce que "ces produits prennent trop de place." Cette mesure mettra sans doute fin au transport des plantes en vrac.

LA RÉCOLTE DES FRUITS EN FRANCE.—Le rendement des Poires hâtives en Maine et Loire a dépassé les prévisions et les exportations furent à peu près normales. Les variétés tardives ne donnent pas des résultats aussi bons.

Dans la région de St. Malo, les vergers de Pommes à cidre donnent une bonne récolte moyenne. On y paie : Poires tardives 25 fr. les 100 kilos, Pommes ordinaires 9 fr., Pommes à cidre 4 à 5 fr.

Aux environs de Cherbourg, on estime que la récolte des Pommes à cidre est excellente en quantité et en qualité. On l'évalue à 550 millions de kilos, la moyenne pour les six années antérieures n'étant que de 325 millions de kilos.

DÉCORATIONS AGRICOLES.—M. Adrien Dariac, député de l'Orne, a demandé à la Commission d'Agriculture de la Chambre française d'inviter le Ministre à examiner s'il ne conviendrait pas de décerner aux cultivatrices dont

les maris ou les fils ont été mobilisés et aux vieux cultivateurs les plus méritants une promotion exceptionnelle du Mérite agricole et de Médailles d'honneur de l'agriculture. "Les mères, les femmes et, hélas! les veuves de nos cultivateurs mobilisés, qui se sont mises résolument à la tâche, qui ont assuré la rentrée des récoltes, qui, seules ou avec le concours occasionnel de voisins de bonne volonté, ont effectué ou effectueront demain les semailles d'automne, ne méritent-elles pas un témoignage public de reconnaissance? Les 'vieux,' qui jouissaient d'un repos bien gagné et qui se sont empressés de reprendre une part du labeur pour remplacer les jeunes partis pour défendre la patrie, ne sont-ils pas dignes aussi de recevoir, pour leur coopération à la grande tâche commune, une récompense honorifique?"

L'ENSEIGNEMENT AGRICOLE EN FRANCE.—L'Institut National Agronomique restera fermé, tous les étudiants étant mobilisés. Les Ecoles d'agriculture pourraient reprendre leurs cours, mais certains locaux sont occupés par l'administration militaire, et seule celle de Grignon sera ouverte. Les autres écoles pourront y envoyer leurs élèves non mobilisés.

LES POMMES DE TERRE EN BELGIQUE OCCUPÉE.—Le gouverneur allemand de la Belgique a fixé les prix maxima suivants pour les Pommes de terre en Belgique :

Industrie, Franche Bol (Lilloise blanche ou Jaune d'Or), Krüger, Magnum Bonum (de la région de Florenville-Virton), 8 fr. les 100 kilos. Magnum Bonum (autres régions), King Edward, 7 fr. les 100 kilos.

Autres variétés blanches, les rouges et les bleues, 6 fr. les 100 kilos.

Les intermédiaires peuvent prélever une prime ne dépassant pas : acheteurs en culture 0 fr. 40, commerçant en gros, 1 fr. les cent kilos; détaillants, 0 fr. 03 le kilo. Ces derniers sont tenus d'exposer visiblement la marchandise et d'indiquer les prix.

Seules les personnes qui s'occupaient régulièrement du commerce, avant le 1er août, 1915, et qui paient la patente, peuvent mettre des Pommes de terre en vente. Toute infraction est punie d'une peine de prison pouvant atteindre un an ou d'une amende allant jusqu'à 10,000 marks.

KORT OVERZICHT VOOR DE VLAMINGEN.

Vreemd fruit blijft omtrent regelmatig in Londen aankomen. Franche peren, druiven uit Holland, Spanje en Portugal krijgt men er zonder moeite.

De appels van den Canada en de Vereenigde Staten worden ook reeds aangetroffen. Men vreest echter dat het oepsichen van boeten voor het bezorgen van mondbehoefte aan de legers, den aanvoer zal beperken. Het zeldze geval kan zich voordoen met het fruit uit Kaapkolonie dat binnen enkele weken beschikbaar wordt.

De prijzen der gewone waar zijn flink, daar de arbeidersbevolking hooge loonen trekt.

De Duitschers hebben besloten dat in België de aardappelen niet meer dan 6, 7 of 8 frank, volgens soort, per honderd kilos mogen verkocht worden. De vervoerkosten voor planten, los op wagon, werden met 50% vermeerderd.

Een fransch volksver-teenwoordiger stelt voor aan sommige vrouwen en ouderlingen die den oogst deden, een bijzonder eere-teeken te verleenen.

ROTTLEIRA FORRESTII.

THIS interesting little Gesneriad (see fig. 88) is a native of Yunnan, where it was found on the eastern flank of the Lichiang range of mountains by Mr. G. Forrest when collecting in 1906. He states that "it grows on moss-covered boulders and branches of trees, in very shady situations, at an altitude of 10-11,000 feet." The rosettes of leaves are 5 inches in diameter, and in appearance are very much like those of a *Ramondia*, the outer leaves having a short petiole, while the inner ones are sessile. The foliage is coarsely dentate, and covered with grey hairs. The plant blooms in June; the scapes reach a height of 6 inches, and bear from 4 to 7 pale yellow cylindrical flowers. Like the leaves, the scape and pedicels have glandular hairs.

The plant illustrated was grown in a cool house, and has not yet been tried out-of-doors, but it is anticipated that the species will withstand mild winters in sheltered situations. Seeds are produced freely, and germinate readily under the conditions that suit *Ramondia*. W. I.

FLORISTS' FLOWERS.

GARDEN GLADIOLI.

ALL Gladioli are admissible in the garden, but of quite recent years the raisers have sent into commerce a series of hybrids or cross-breeds which, flowering from summer till late autumn, provide a feature in the garden of great decorative value, and it is more particularly of these that I write. Some exhibit a large measure of the old *Gandavensis* in bloom and bearing. Others verge on *Lemoinei*, and intermediate forms of great beauty are to be had. A feature of importance is their vigour and freedom from disease, which render the upkeep of a collection of the more refined varieties of *Gandavensis* such a worry and vexation. Even in our northern climate most of the plants produce seeds with the utmost profusion, so much so that I have to place a limit to their fecundity. I have thousands of seedlings on hand, and it would become a question of where to find room were one to continue propagating from seeds indefinitely. Some of them, too, produce so much "spawn" annually, that by that means alone the few soon become an unmanageable number. The beautiful *Halley* is one such, and it possesses the property of providing young corms large enough to flower the succeeding season, which is a great advantage, *Halley* being very early. Here it flowers in July and early August, but the little corms of the previous year—the stronger ones—continue throwing spikes until they are destroyed by frost. Large numbers of small corms can be grown in comparatively little space. All Gladioli grow best in a deep, friable soil, therefore the ground should be cultivated deeply and well enriched with rotted manure. I plant them in deep drills, into which some light, sandy compost has been placed, and cover them with the same material. All the attention that is needed subsequently is weeding and stirring the soil. The corms may either be lifted before winter sets in, or they may be left with a protective covering for the winter, to grow another year. Seeds should be germinated in heat, sowing them in February or March, and if there is time they should be transplanted in May at the latest in well-prepared soil. This year we had not labour for this, and the seedlings have been grown on in the boxes in which they were sown, but next spring, once growth commences, they must be planted out in order to obtain strength.

The old corms are left until the latest moment before lifting, most of them being so hardy that those which escape notice at lifting survive our winter and grow freely the next year, so that there is no hurry to lift on account of weather. I prefer to have some soil remaining on the roots,

for it allows the plants to dry off more slowly in the cold house in which they are laid out, and it is very beneficial to the little corms, which are not removed till the large ones are cleaned.

Most of the sorts in question lend themselves admirably to garden decoration. Many people seem to remain content with the old *Brenchleyensis*, planted in conjunction with *Galtonia candicans*. With these, from the *White Glory* of Holland to Groff's strain of deep-glowing purple, we are enabled to produce a large number of varied effects. It is always a mistake to plant Gladioli without some suitable subject to hide the soil, or if early to flower to hide the stems. For the latter purpose we employ *Montbretias*. *King Edmund* is a good variety for the purpose, and of lower-growing plants, *Saponaria calabrica*, *Nigella Miss Jekyll*, *Violas*, *Godetia Schaminii* fl. pl. and *Nepeta Mussinii* are all suitable. It is a mistake, moreover, to plant these Gladioli as widely apart as is usual for those cultivated to produce exhibition spikes. The plants succeed quite well set much closer, and in large borders of mixed flowers, up to fifty of a sort, produce an unique effect. R. P. *Brotherston, Tyninghame Gardens, Prestonkirk.*

Vallota hybrida. It is a very pretty, free-flowering bulb, and for a time there was a considerable demand for it, but the plant appears to have almost dropped out of cultivation.

Those of the third section, which contains the greatest number of species, are bulbs not much larger than those of a *Snowdrop*, with dark-green, grass-like leaves, about a foot long, and from a quarter to one-third of an inch in width. The flowers, which are borne in loose clusters on a spike from 12 to 18 inches in height, are of a tubular shape, somewhat curved, about 1½ inch long, and about half an inch across the expanded mouth. The chief members of this group are *angustifolius*, light scarlet; *lutescens*, pale yellow; *Mackenzii*, white; *Macowani*, scarlet; and *intermedius*, reddish buff. The last-named is a hybrid between *lutescens* and *Macowani*. All form valuable plants for the decoration of the greenhouse, as they succeed under the same conditions as *Zonal Pelargoniums*, and produce their pleasing blossoms more or less plentifully throughout the greater part of the year. The bulbs do not go absolutely to rest at any time, but are partially dormant in the depth of winter, when they should



[Photograph by W. Irving.]

FIG. 88.—ROTTLEIRA FORRESTII : FLOWERS PALE YELLOW.

THE GENUS CYRTANTHUS.

THE different species of *Cyrtanthus* form a class of very pretty flowering bulbs, all natives of South Africa. A great dissimilarity exists between them. *Cyrtanthus obliquus* forms a large, firm bulb, which produces a sturdy spike a couple of feet or more in height, terminated by an umbel of drooping flowers, yellow, red and green in colour, about 3 inches long, and of a firm, wax-like texture. *Cyrtanthus sanguineus*, also known as *Gastronema sanguineum*, is quite distinct from any of the others. In general appearance it suggests a small *Vallota*; indeed, it is nearly related thereto, for hybrids have been raised between the two plants. One received the R.H.S. First-Class Certificate in 1885, and the following year a paler form—*roseum*—gained a similar honour. Numbers of the same cross (*C. sanguineus* being the seed-bearing parent) were raised in Mr. William Bull's nursery at Chelsea, and distributed in 1898 as

be kept nearly dry. Early in the year they start into growth, when the flower-stems develop, and a succession of blooms, more or less plentiful, is maintained till autumn is well advanced. The plants are easily cultivated, and are seen to the best advantage when grouped in clumps or masses in pots or deep pans. For a single bulb a pot 4 inches in diameter will suffice. A suitable compost consists of two-thirds loam, one-third leaf-mould, and a liberal sprinkling of sand. The plants may be potted during the spring and summer as soon as the flowers are over, that is if they are not carrying seed-pods. Offsets are freely produced, and in this way the plants may be increased readily. They may also be raised from seeds, and the more forward seedlings will flower in about eighteen months from the date of sowing. The different species of this group intercross readily, and I have in this way obtained some very pretty and interesting forms. Unfortunately they passed out of my care before some of the more promising ones were fully developed.

The seeds, which are not unlike those of a miniature *Hippeastrum*, should be sown when ripe, unless this happens at the end of the summer or in autumn, when it is best to defer sowing until the spring. Pans are the most convenient receptacles, and they should be filled with similar compost as that recommended for potting. The pans should be clean, and effectually but not excessively drained. The seeds should be sprinkled thinly on the surface, and covered with about a quarter of an inch of fine soil. In the warmer part of a greenhouse they will germinate quickly. When sufficiently advanced the young plants may be pricked off into pans, shifting them singly into thumb-pots later. The next shift should be into pots 4 inches in diameter, in which they will flower. The possessor of but a single greenhouse, as well as the owner of more pretentious establishments, will, I am sure, derive a considerable amount of pleasure from the cultivation of these pretty, flowering, bulbous plants. *W. T.*



FIG. 89.—ROSE MRS. JOHN FOSTER.

ROSE MRS. JOHN FOSTER.

This new Rose (see fig. 89) is a variety of the Hybrid Tea section, and was raised by Mr. Elisha J. Hicks, who submitted specimens to the R.H.S. Floral Committee on the 12th inst., for award, the committee granting it an Award of Merit. The bloom is of a glowing crimson colour of good shape, and very fragrant. The habit is said to be dwarf, so that the plant should make a splendid bedding variety and a valuable autumn-blooming Rose.

PUBLICATIONS RECEIVED.—*Beltane the Smith.* By Jeffery Farnol. (London: Sampson Low, Marston & Co., Ltd., 100, Southwark Street, S.E.) Price 6s.—*My Garden in Autumn and Winter.* By E. A. Bowles, M.A. (Edinburgh: T. C. & E. C. Jack.) Price 5s.

HOME CORRESPONDENCE.

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

"SILVER-LEAF" ON AZARA.—A plant of *Azara microphylla* recently developed this disease on the lower branches and has also a good deal of the fungus (sterium) on decaying parts of the stem. Silver-leaf is not uncommon here, especially in the woods, where there are large plants of Portugal Laurel. But all the cases of silver-leaf I have hitherto met with have been restricted to plants of the Natural Order Rosaceae, whereas *Azara* belongs to the widely-separated Bixineae. *W. H. Divers, V.M.H., Belvoir Castle Gardens.*

POTATOS AND BLACK SCAB.—Is it worth while attempting to raise varieties of Potatoes immune from black scab? Would it not be better to refrain from attempting to grow Potatoes in land in which the fungus is known to be present until it can be exterminated by a process of cultivation and cropping with other plants such as cereals? There are far too many varieties of Potatoes already, many so much alike that to

opinion, is why the crop is not always a success. *J. C. Grimwood, 1/8th Essex (Cyclists).*

NODULES ON THE INTERMEDIATE BLADDERWORT.—Mr. Evans is correct in assuming (p. 234) that the nodules he observed on the Intermediate Bladderwort are resting buds which serve to propagate the plant. Kerner and Oliver, in *The Natural History of Plants*, Vol. 11., p. 307, describe them in detail, while Babington, *Manual of British Botany*, 9th ed., p. 339, has the following sentence in his description of *Utricularia intermedia*: "Increasing by buds at the end of the shoots and seldom flowering." These resting or brood buds are also referred to in Bevis and Jeffery's *British Plants, their Biology and Ecology* (p. 54). *J.*

PILLAR ROSES (see p. 242).—Mr. Molyneux states that white-flowered Roses suitable for growing on pillars are scarce, and I agree with him. When he declares, however, that in the Wichuraiana section the new Mrs. M. H. Walsh stands ahead of all others in purity of petal, and is of good growth, I disagree with him. Has he tried Sanders' White Rambler? It is the finest white Wichuraiana hybrid I know, and no other variety surpasses it for well-shaped flowers of the purest white. The blooms are very fragrant. The plant is a strong grower and almost mildew-proof, whereas Mrs. M. H. Walsh is highly susceptible to mildew. I venture to predict that Sanders' White Rambler will soon become the most popular white Rose of its class. *Excelsa* and *Troubadour* were both sent out by Walsh in 1909. I find the latter the better of the two, and think it is the finest crimson Wichuraiana hybrid in cultivation. *George M. Taylor, Mid-Lothian.*

LARGE PEACHES (see pp. 173, 186, 234).—Peach Sea Eagle has done remarkably well here this year in a cool house. Seven fruits weighed 11 ozs. each, and six fruits 10 ozs. each. The tree carried a very large crop. *F. G. Wicks, Bushey House Gardens, near Watford, Hertfordshire.*

SILVER-LEAF ON APPLES.—I am interested in *Southern Grower's* remarks on silver-leaf on Apple grafts (see p. 227). There is a case of the kind here. Three years ago three trees of Betty Geeson were headed back and regrafted, two with Newton Wonder and one with Peasgood's Nonesuch. All the grafts grew strongly, but the second season one of the trees of Newton Wonder developed silver-leaf on all its growths, and is still affected, but as it continues to grow strongly I have not condemned it yet. The other two trees are quite healthy and are making good heads. I have no other case of silver-leaf in garden or orchard here. The grafted trees are close together, and the trees from which the scions were taken are in robust health. With regard to *Southern Grower's* interesting remarks on colour variation in Apples (under the heading of "Influence of Stock on Fruit"), I suppose it has come to his notice that some Apples show great variation of colour even when stock, soil and situation are equal. The most striking case I know in this respect is that of the variety Lady Sudeley. Four years ago I planted four half standards of this variety in a row. Two of the trees produce fruit in which the yellow colour predominates, with streaks of crimson. The other two bear Apples of a bright crimson colour all over, with streaks of a darker hue. I had often before admired similar beautifully coloured specimens of Lady Sudeley in a neighbouring garden, and had attributed the enhanced colouring to an exceptionally favourable situation, but evidently this is not the influencing factor in this case. My four trees were purchased together, and are presumably of the same kind of stock. It is, I suppose, possible that a variation, caused in the first place by a certain stock, may become perpetuated by scions taken from this tree, and that these again may, by scions, hand down the characteristics. *T. E. Tomalin, Bessborough Gardens, Piltown, co. Kilkenny.*

THE FOOD SUPPLY.—By way of confirming your excellent advice on p. 248 in the leading article in the last issue, permit me to state my experience in my private garden this season. In

add others except for a good reason seems absurd. The names of no fewer than 88 varieties are given on page 251. *E. S.*

THE CHERRY PLUM (MYROBALAN) (p. 219).—Mr. W. Bird, of the Home Farm, Loxden, near Colchester, has three large Cherry Plum trees (*Prunus cerasifera*), planted by himself some thirty years ago. He has picked so many as thirty-five bushels of fruit from the three trees in a single season, and has to use a thirty-five stave ladder to gather the crop. There is a ready market for the fruit, which in some seasons realises £1 per bushel. Mr. Bird attributes the fruitfulness of his trees partly to the close proximity of bees. The Cherry Plum makes a splendid preserve, good both in appearance and flavour; but as a dessert fruit it is rather disappointing, seeming to lack flavour. The tree grows more rapidly than any other fruit tree in my experience. But it flowers extremely early, and this, in my

early spring my Potato patch was dressed with well-decayed grass and leaves, and the ground deeply dug, one spit deep, say 10 inches on the average. In April the drills were made rather deeply, and along these, before planting the seed tubers, I scattered wood ashes freely. The result was a splendid crop of Midlothian Early, which was the variety grown, averaging just over 3 lbs. of tubers per root, and free from disease. It is held by many that potash is a preventive of Phytophthora, or common Potato disease, and in any case this seemed to be true, as disease is very prevalent this season in my district. May this prevalence be accounted for by the fact that potash manures were almost unprocureable by growers at planting time? W. Cuthbertson, Duddington, Midlothian.

WOMEN GARDENERS (see pp. 219, 252).—I did not mean to raise the question suggested by W. W. I do consider, however, that it is well for any young woman who thinks of engaging in gardening for a living to know that she must start at the bottom and be conscious that, for obvious reasons, men are far more suited to the work than women. I appreciate their efforts to do their best, but W. W. does not seem to see the difference between lady tennis and hockey players who are doing what they can, because they have the interest of the country at heart, and women who are adopting gardening for the sake of their bread and butter. My object in writing was to persuade them that to hold their own later they must spend the necessary time and study to be trained sufficiently to make a living in their profession, and realise even although they are women they will find it very difficult to obtain situations as head gardeners even after twelve or fifteen years' experience. S. J. Martin.

LATE PEAS.—This season has proved to be a good one for late Peas, and I am not surprised to find your various correspondents remarking on the same. A dish of Peas in October is always appreciated, but there are only a few suitable varieties, and much depends on the season. For some reason or another, Gladstone has done particularly well this year, though in this locality it frequently fails, the haulm dying in a remarkable manner, consequently we do not depend altogether on this variety. Autocrat is still our best late Pea, for it has never failed us. Its splendid constitution carries it well through any season. At the date of writing, October 18, we have a healthy row 100 yards in length, from which we are picking pods filled with Peas of delicious quality almost daily. The plants promise to continue to bear for a long time yet, should the weather remain open. E. Beckett, Aldenham House Gardens, Elstree.

DO PEAR TREES SPORT?—In an orchard belonging to Captain C. F. Hooper, at Sheldwick, near Faversham, is a Black Worcester Pear tree, aged 80 to 100 years: the height is 40 feet, girth 5 feet, and the tree yielded this year 7 bushels of fruit. At a height of 8 feet from the ground a branch has developed, now six or seven years old, which has fruited two or three times. This branch is growing in the interior of the tree, but is quite different in foliage and fruit from those on the rest of the tree. The leaves are two or three times as large as those of Black Worcester. The fruit of this particular branch is a golden colour, and resembles Jargonelle, being ripe at the end of August, but its leaves are rounder than those of Jargonelle. The fruit of Black Worcester is russety and red, fit for stewing from October to February. Is this a "sport"? My uncle and his gardener have known the tree for forty years, and to their knowledge it has never been regrafted or budded. Cecil H. Hooper, Wye, Kent.

ERICA CINEREA.—I have often wondered why the specific name, "cinerea," was given to this plant. The ash-grey appearance being so striking in E. Tetralix, one might be excused for thinking that a mistake in the nomenclature had been made at some time. If not, to what does "cinerea" apply? J. M.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 12.—Present: Mr. E. A. Bowles, M.A. (in the chair), Dr. Rendle, Messrs. A. Worsley, W. C. Worsdell, J. Fraser, J. W. Odell, W. Cuthbertson, J. Ramsbottom, J. T. Bennett-Poë and F. J. Chittenden (hon. secretary).

Astelia Banksii.—Mr. Fraser drew attention to the plant from Abbotsbury shown at the last meeting under the name of *Pitcairnea albucaefolia*. It had been so named from its foliage, but now it had flowered it proved to be *Astelia Banksii*, a native of North Island, New Zealand. Dr. Rendle confirmed Mr. Fraser's identification of the plant and said that it formed a curious feature of the vegetation of New Zealand, often growing as an epiphyte as well as in the soil.

Antirrhinum eaten by animals.—Mr. Cuthbertson called attention to the damage done by some gnawing animal (possibly the short-tailed field mouse) to the developing fruits of *Antirrhinum* at Marks Tey, Essex. The half-ripe fruits were bitten through and either partly or wholly devoured. The only variety attacked out of a great number was Yellow King.

Curious Hazel.—Dr. Rendle showed a curious Hazel having the edges of the cup (which was of the *Avellana* type) very deeply divided into long, finger-like processes.

Pinus with juvenile and mature foliage.—Messrs. CHEAL exhibited a plant of *Pinus Pinea* about 3 feet in height bearing both juvenile and mature foliage, the juvenile form being present on shoots both at the base and near the top of the tree. Sir D. Morris had recently noticed a similar thing on large trees of this species near Bournemouth, and the tree not uncommonly produces them when cut back.

Rose attacked by Botrytis.—Mr. J. H. Gould sent shoots of Roses attacked by the fungus *Botrytis*. The course of the disease was said to be as follows:—"First a shoot shows the disease: this may be either in the middle or towards the top of the shoot—never at the base. The attack commences at one side. When it has worked completely round the shoot it progresses both upwards and downwards until it has destroyed the whole shoot. The plants are not dying from the base; on the contrary the base is the last part of the plant to show sign of disease." The fungus probably attacks shoots damaged or weakened by some cause, the result being similar to that seen in the attack of the same fungus on Gooseberries.

Gall on root of Cupressus.—Mr. Finlay Sanderson, of Chislehurst, sent a large gall (larger than a cricket ball) from the root of a tree of *Cupressus Lawsoniana*. Similar galls on the roots of *Cupressus* and other plants have frequently been shown before the Committee and are probably due to the attack upon the plant of *Bacillus tumefaciens*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 23.—Committee present: Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. J. Bolton, J. C. Cowan, J. Cypher, J. Evans, P. Foster, A. R. Handley, A. Hammer, J. Lupton, D. McLeod, W. J. Morgan, S. Swift, H. Thorp, Z. A. Ward, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Brassia-Laelio-Cattleya Wotan variety Mrs. J. Leeman, a fine flower with a well-fringed lip, shown by J. LEEMAN, Esq.

Cattleya Venus Rann Lea variety, from H. J. Bromilow, Esq.

AWARDS OF MERIT.

Odontoglossum crispum variety *Mirabile* and *Cattleya* variety *Katie* (*fulvescens* × *aurea*), both shown by R. ASHWORTH, Esq.

Cattleya Snowdon (Suzanne Hye de Crom × *Gaskelliana alba*) and *Laelio-Cattleya* Mrs. McMasters variety *Splendens* (*luminosa* × *aurea*) both exhibited by J. LEEMAN, Esq.

Cattleya Sybil variety *Boltonia*, from J. J. Bolton, Esq.

FIRST-CLASS CULTURAL CERTIFICATES.

Mr. E. ROGERS, gr. to O. O. Wrigley, Esq., for *Cypripedium Maudiae* and *Odontoglossum grande*.

GROUPS.

The following Medals were awarded for collections:—

R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden), was awarded a Silver-gilt Medal for a group in which were shown *Cattleya Katie*, *C. Iris* var., *C. Moonbeam*, *C. Acis*, *C. Adela*, *C. Ajax*, *Laelio-Cattleya Golden Oriole*, *Brassia-Cattleya Leemanae*, *B.-C. Veitchii*, *Odontoglossum crispum*, *Cypripedium Lord Ossulston*, *Chillingham* variety, *C. Gaston Bultel*, *C. elatior*, *C. Lawre-Maud*, and *C. Maudiae*; *Miltonia Leopoldii*, *M. Moreliana atro-rubens*; and *Dendrobium formosum giganteum*.

Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton), was awarded a Silver Medal for a group comprising many *Cattleyas*, including *C. Maronii*, *C. Nisa*, *C. Smith-Dorrien*, *C. Fabia*, *C. Iris*, and a fine batch of *Epidendrum vitellinum autumnale*.

Silver Medals were awarded to J. J. Bolton, Esq., Peudleton (gr. Mr. J. Law), and Messrs. Cypher and Sons, Cheltenham.

O. O. WRIGLEY, Esq., Bury (gr. Mr. E. Rogers), was awarded a Special Vote of Thanks for an exhibit comprising 45 plants of *Cypripedium Maudiae*, 11 plants of *Odontoglossum grande*, *Cattleya Gaskelliana alba*, and *Epidendrum vitellinum autumnale*.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 11.—The monthly meeting of this society was held at the R.H.S. Hall on Monday, the 11th inst. Mr. Arthur Bedford occupied the chair. One new member was elected. One member was allowed to withdraw £1 from his deposit account. The death certificates of four old members were received, and the sums of £39 1s. 9d., £27 10s., £13 2s. 3d., and £9 14s. respectively were passed for payment to their nominees. Two Army forms were also received notifying the society of the death of two young members who had been killed in battle, and the sums of £11 17s. 1d. and £1 17s. 7d. respectively were passed for payment to their nominees.

The sick pay for the month on the ordinary side amounted to £43 1s. 8d., on the State section to £19 15s. 6d., and maternity claims to £6.

LAW NOTE.

AGRICULTURAL AND HORTICULTURAL ASSOCIATION, LTD.

PURSUANT to the provisions of the Companies Consolidation Act, a meeting of creditors was held at the Holborn Restaurant on Monday last, under the liquidation of The Agricultural and Horticultural Association, Ltd., of 92, Long Acre, W.C., and Deptford, S.E., when Sir William Peat, the well-known accountant, occupied the chair. The chairman said the company was a very old one, having been formed as far back as 1867, so that it had been in existence for upwards of 48 years. Until a few weeks ago, he was a complete stranger to the company, and during that short period he had only been able to go into the company's history and financial position for the past few years. There were two classes of creditors, viz., depositors and unsecured creditors. According to the memorandum and articles of association, the company was formed on what might be termed co-operative principles. As far as he could make out quite one-third of the depositors were neither shareholders nor associates, but the remaining two-thirds of the depositors were either shareholders or associates, in which capacities they received the company's annual reports and balance-sheets. The last balance-sheet of the company was prepared as at June, 1914, and

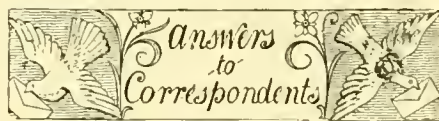
showed assets amounting to £157,000, whilst the issued share capital was £13,545. There were also depositors for £105,900, and other creditors amounting to £26,000. The reserves at that date amounted to more than £15,000. The assets included such items as freehold and leasehold premises, £9,700; stock in trade, £34,400; trade marks, copyrights, show cards, etc., £8,200; blocks, £2,400; furniture and fittings, £4,600; manure works at Deptford, £5,900; oil cake mills at Deptford, £8,100; advertising suspense account, £12,900; and debtor balances, £56,900. Such items as trade marks, furniture, and advertising suspense accounts aggregated £60,000 or £70,000, and an independent person might be disposed to put their value at a much less figure. The company for years past had been in the habit of advertising freely, and during the last five or six years the advertisements and publications cost about £10,000 per annum. During 1913 and 1914 business was not so prosperous as previously, and a portion of the advertising charges were carried to a suspense account, and so upheld in the balance-sheet. People who carefully examined the balance-sheets would see that the assets of over £150,000 were not really worth that amount as between the company and a prospective buyer. A willing purchaser might have been entitled to ask for an allowance of £60,000 off the assets. On September 18 last the liabilities of the company amounted to £131,125, and there were 1,849 creditors for amounts of less than £10 each. For amounts exceeding £10 there were upwards of 1,004 creditors. The assets were estimated to realise £70,390, or as near as possible a dividend of about 10s. in the £. The managing director was of opinion that the assets would produce £84,595, and if those figures were correct the estate would show about 12s. 6d. in the £. The assets consisted of freehold and leasehold premises £16,000, less charge on same, amounting to £9,000, leaving the net balance at £7,000; stocks in London and the various depots, valued at £39,000, estimated to realise £29,000; trade marks, etc., £8,700, expected to produce £2,000; gardening books, £2,860, valued at £200; furniture and fixtures, cost £9,000, valued at £2,000; electric light installation, £400; machinery, £1,500; warehouse fittings, cost £8,700, valued at £4,000; sundry debtors, £41,800, estimated to realise £25,000; and shares in other companies were valued at £1,000. The managing director was of opinion that the trade marks would produce £7,000, the gardening books £1,440, furniture and fixtures £4,000, and the warehouse fittings £8,000. The chairman, continuing, said he thought the goodwill was of some value, as the company had traded successfully for 44 years, and the turnover had exceeded £60,000 per annum. Therefore the One and All trade mark should be of value. He thought the capital of the company was inadequate for a trade of the magnitude that had been carried on. The capital was only £12,500, whereas the creditors exceeded £100,000. He did not think some of the unrealisable assets, such as goodwill, should have been allowed to assume such large figures in the balance-sheets. The balance-sheets were prepared on June 30 of each year, and during recent years the results had been as follows:—1905, profit £2,170; 1906, profit £1,450; 1907, profit £180; 1908, profit £590; 1909, profit £700; 1910, profit £1,270; 1911, profit £1,174; 1912, a small loss; 1913, a loss of £5,000, after debiting £11,000 for advertising; and 1914, a loss of £7,300, after debiting £10,300 for advertising. The sales reached the highest point in 1911, when they amounted to £71,000. Of the unsecured liabilities, about £102,000 was owing to depositors. The total fees received by the Council were only £160 per annum, while the managing director received £700 per year. A petition had been presented to the Court, in which the suggestion was made that the deposits were ultra vires to the business of the company, but that was not the opinion of Sir Frank Crisp. In the course of a long discussion which ensued, it was stated that the petition for compulsory liquidation had been presented by a firm of paper merchants. Eventually a resolution was passed confirming the resolution to wind up the company voluntarily, with Sir William Peat as liquidator.

Obituary.

JOHN MACDILL CLARK.—We learn from the American journal *Horticulture* of the death of Mr. J. MacD. Clark, the secretary of the Leonard Seed Company, of Chicago. Mr. Clark was born in Kirkcubright in 1860, and emigrated to America at the age of seven years. At the conclusion of his education he entered the seed trade, and his career was one of marked success. He had held his last position since 1885.

JOHN LAMBERT.—The American horticultural press announces the death of Mr. John Lambert, at Fall River, Mass. Mr. Lambert was born at Ashton-under-Lyne sixty-one years ago, and emigrated to America when about thirty. For the past fifteen years he had been engaged in the florist trade, in which he had been very successful.

DR. J. MEDLEY WOOD.—The news of the death of Dr. J. Medley Wood, the veteran South African botanist, will be learned by our readers with the deepest regret. He died at the Botanic Gardens, Durban, on August 26, in his eighty-seventh year. Dr. Wood was a native of Mansfield, Nottinghamshire, but he had lived in Natal for sixty-three years. His early career in the colony was a varied one, for he followed the law for a time, then engaged in trading and afterwards devoted himself to farming. But his interest was in the study of plants, and his botanical instinct was stimulated by the rich local flora, of which he sent specimens in large numbers to the herbarium at Kew. He found his true sphere when, in February, 1882, he was appointed Curator of the Durban Botanic Society's Gardens, which he raised to a position of importance, and founded at Durban one of the finest colonial herbaria in the world. For a long period he contributed notes from time to time on South African plants to these pages. He was also the author of many valuable works bearing on the plants of Natal, the most important being *Natal Plants*, of which six volumes have been issued. The Botanic Gardens offered opportunities for the investigation of economic problems, and in this connection Dr. Wood did much valuable work, which was recognised by the Government by an annual public grant. The Botanic Gardens have recently been taken over by the Corporation of Durban, and Dr. Wood ceased to hold the office of director at the time of the change, when he became Director of the Natal Herbarium.



CATERPILLARS ON TREES: A. D. W. The caterpillars are those of the Cabbage Moth, *Mamestra oleracea*. They feed on many kinds of plants.

CYDONIA JAPONICA: E. S. The fruits of *Cydonia japonica* are not poisonous, but on the contrary may be used for making jelly and other preserve. For jelly, the procedure is the same as for Crab-apple jelly.

GRAPE LADY DOWNE'S: W. G. W. We found little or no sign of what is generally called shrivelling in the bunch of Lady Downe's Grape, but there appears to have been a cracking or rupture of the skin followed by a mould growing on the exposed pulp, which ultimately rots. Excessive nitrogenous feeding, applying stimulants too late in the season, or a border insufficiently aerated will cause cracking in the berries. Excessive damping of the surface of the border will prevent sufficient air from reaching the roots, and so will heavy or close mulching. If a mulch is applied the litter should be loosened occasionally with a fork, especially when cow-dung is used with little or no straw. The manure should never be placed in a thick layer nor be applied before the border has become warmed by the sun. Its nitrogenous matter should also be exhausted before the berries begin to

colour. The reason why the variety Lady Downe's is the only one affected in the vine is because that variety is not such a gross feeder as the others.

MARKET GARDENER'S TENANCY: *Grower.* You state that you are a tenant as market gardener, the rent being payable half-yearly, but that you hold no written agreement. You do not give the terms on which you originally took the market garden, but, in the absence of evidence to the contrary, you would be regarded as a yearly tenant, and be therefore entitled to a year's notice, expiring on the anniversary of the day on which your tenancy commenced.

NAMES OF FRUITS: C. J. W. 1. Gascoyne's Scarlet Seedling; 2. Rival; 3. Pile's Russet; 4. Warner's King; 5. Sam Young; 6. Beurre Clairgeau; 7. Comte de Lamy; 8. Bergamotte d'Automne; 9. Whiting Pippin; 10. Joséphine de Malines; 11. Beurre Dumont; 12. Emile d'Heyst; 13. Bergamotte Bufo; 14. Lord Burghley; 15. Nec Plus Meuris.—J. H. D. 1. Yorkshire Greening; 2. Cellini; 3, too decayed to recognise; 4. American Mother.—F. B. 1. Nouveau Poiteau; 2. Doctor Pigeaux.—M. C. *Worcestershire.* 1. Yorkshire Beauty; 2. Small's Admirable; 3. Brockworth Park; 4. Braddick's Nonpareil; 5. Potts's Seedling; 6. Brown Codlin; 7. Williams' Bon Chrétien; 8. Aromatic Russet.—F. W. Gamble. 1. Fondante d'Automne.—R. G. 1. Baldwin; 2. Yorkshire Greening; 3. Broad-End; 4, not recognised; 5. Herefordshire Pearmain; 6. Waltham Abbey Seedling.—E. F. 1. Wellington; 2. Waltham Abbey Seedling; 3. Reinette de Caux; 4. Tower of Glammis; 5, not recognised; 6. Woodcock; 7. Beauty of Kent; 8. King of the Pippins; 9. Winter Greening; 10. Ashmead's Kernel; 11, not recognised; 12. Sturmer Pippin.—J. Mills. 1. Bess Pool; 2. Norfolk Bearer; 3. Bismarck; 4. Northern Dumping; 5. Crimson Quoining; 6. Potts's Seedling.—J. Hayes. Harvey's Wiltshire Defiance.—T. Hammond. Lady Henniker.—W. Thompson and Sons. 1. Manks Codlin; 2. Beauty of Kent; 3. Sheep's Nose.—Ding. M. H. Annie Elizabeth.—J. R. Cox's Orange Pippin.—A. S. K. Apple King Harry.—A. J. McCormac. 1. Beurre Diel; 2. Doyenné du Comice; 3. General Todleben; 4. Beurre Bachelier. These four varieties are in season October-November; 5. Gansel's Bergamotte (October); 7. Beurre Clairgeau (November-December); 8. Nec Plus Meuris (February-March); 8. Glou Morceau (December-January); 10. Maréchal de Cour (October-November); 11. Fondante d'Automne (October); 12. Marie Benoist (November-December).—D. McL. You have not observed the rules applying to correspondents who send fruits for naming. Two fruits each of six varieties only should be sent at one time, and the name and address should be given, not necessarily for publication, but as a guarantee of good faith. Please send us your full name and postal address, and we will keep the specimens here in the meantime.

NAMES OF PLANTS: G. B. 1. *Abelia rupestris*; 2. Send in flower; 3. *Crataegus Crus-galli*; 4. *Periploca graeca*; 5. *Cornus Mas variegata*; Cornelian Cherry; 6. *Asclepias curassavica*; 7. *Forsythia suspensa*; 8. *Plumbago Lar-pentae*; 9. *Zauschneria californica*, known as Californian Fuchsia.—*Twyford.* *Buddleia variabilis*. You may prune the tree now or in the spring.—N. D. 1. *Perovskia atriplicifolia*; 2. *Aristotelia Macqui* var. *variegata*; 3. *Erythrina Crista-galli* (Coral-tree).—C. J. W. 16. *Hibiscus syriacus* var.; 17. *Crucianella stylosa-purpurea*; 18. *Crataegus Pyracantha* var. *Laelandii*; 19. *Escallonia macrantha*; 20. *Cotoneaster microphylla*; 21. *Escallonia langleyensis*; 22. *Viburnum Opulus*.—T. A. H. The "shrub" is *Aesculus californica*; the other specimen is too small to identify.—D. S. *Gilia coronopifolia*.

Communications Received.—U. of M.—F. E. W.—A. J. B.—E. A. B.—Pembroke—Regular Reader—"Violet"—A. L. B.—T. S.—"Amateur"—F. J.—W. R.—D.—W. W.—Prof. P.—G. H. R.—A. J. G.—J. M. M.—S. A.—H. D.—J. R. L.—M. B.—E. S. R. T.—K. A.—W. H. C.—"Experience"—E. M.

THE Gardeners' Chronicle

No. 1505.—SATURDAY, OCTOBER 30, 1915.

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BROWN ROT OF FRUIT.

APPLE and Pear rot due to *Sclerotinia fructigena* is prevalent this year, owing probably to the spells of wet weather which occurred this summer.

The fungus causing this rot is an Ascomycete, and has two stages in its life-history—the sclerotial stage and the summer or conidial stage, more commonly known as *Monilia fructigena*, on Apple and Pear fruits (see fig. 91). A closely allied species, *Monilia cinerea* (*Sclerotinia cinerea*), which differs somewhat from the above in external appearance and in certain biological peculiarities, attacks stone fruits, such as Cherries and Plums, and yet a third species, *Monilia laxa* (*Sclerotinia laxa*), attacks Apricots.

The conidia of *Monilia cinerea* remain viable throughout the winter and infect the blossom of stone fruits in the early spring. On the contrary, the conidia of *M. fructigena* die in the autumn, but the mycelium persists in the twigs, branches, spurs, and mummified fruits and gives rise to fresh conidia in the spring when the Apple and Pear blossoms open. Another difference between the two species is that of colour of pustule—*M. fructigena* has yellowish ochre and *M. cinerea* (as the name implies) has pustules of a greyish tint. In both cases, when the fruit is attacked, a soft brown rot sets in, and the fruit either drops to the ground, or shrivels and hangs on the trees in a mummified condition throughout the following winter.

Fruit-growers' and gardeners in this country do not sufficiently realise the im-

portance of removing rotten Apples, Plums and other fruits which have fallen to the ground. Mummified fruits still hanging on the trees should also be collected during the winter pruning. Such fruits should not be thrown on the rubbish heap, but burnt. The mummified fruits form dangerous sources of infection the following spring, as the illustration in fig. 90 shows. Here, as indicated by the arrow,

attacks the blossom of stone fruits under natural conditions, chiefly because the blossom of the latter opens very much earlier in the spring. Both species of fungus, however, occur on the fruits of Apples, Pears, Plums, and probably Cherries. When *Monilia cinerea* occurs on Apples, according to Woronin, the Apple turns black and the flesh remains firm very much longer, owing to the more



FIG. 90.—BROWN ROT OF APPLE.

A, mummified diseased Apple of the previous season infecting sound fruits of the present year.

a mummified fruit of the previous year, in contact with a sound green Apple of *Cedlini Pippin*, has infected the sound fruit and started the typical *monilia* rot. This photograph was taken at the end of July, when the Apples were still green and unripe.

The spurs are mostly attacked by mycelium passing down the fruit stalk, and

gradual drying out of the sap, and the pustules take much longer to develop than in the case of *M. fructigena*.

The second stage, the sclerotial stage, of both *M. fructigena* and *M. cinerea*, has been recorded in America, but so far as is known has not been observed in this country. It probably does occur, especially in orchards under grass, where the

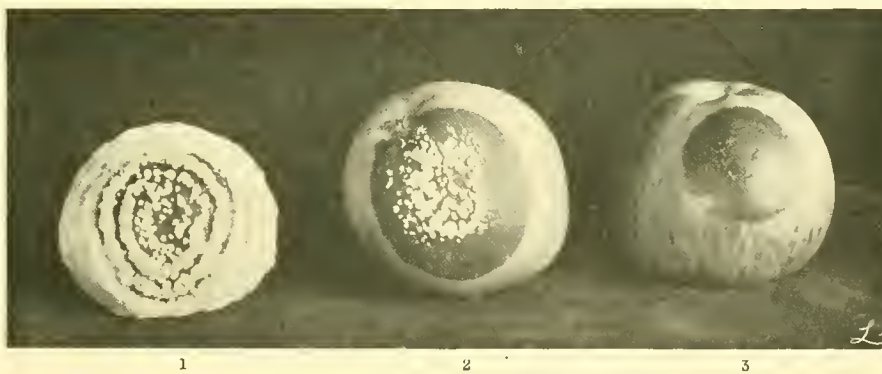


FIG. 91.—APPLES AFFECTED WITH BROWN ROT.

2 and 3 show the stage of rot after six days; 1 after twenty-six days.

dead spurs are of frequent occurrence on diseased trees. The leaves of the spur often adhere to the infected fruit of the current year, the leaf tissues become permeated with mycelium, turn brown, and die. When the blossom is attacked the flowers shrivel and drop, and consequently the fruit crop is materially diminished.

It is an interesting fact that *Monilia fructigena*, the pip fruit rot, rarely

rotten fruit falls to the ground and becomes covered with fallen leaves and dead grass.

Sclerotia are formed in the fallen fruit, and give rise, after a period of rest, to small cup-shaped light brown apothecia 3 to 5 mm. in diameter, which later flatten out more into a disc with a depressed centre. The stalks of the apothecia are slender and from 0.5 to 1.5 cm. in length.

According to Sorauer it takes two winters for the sclerotia to ripen and develop apothecia. The rot may also spread rapidly in the fruit room, especially when the fruits are placed in contact with one another, or are slightly injured or scratched. The fungus is a wound parasite, and injuries too small to be seen with the naked eye are quite sufficient to start the rot. The illustration in fig. 91 shows some artificially infected Apples. The skin was punctured with a sterile needle and a few summer spores introduced. The Apples were then kept under a bell jar at room temperature. The fungus is whiter in appearance than under outdoor conditions, owing to the rapid growth of mycelium in the moist atmosphere under the bell jar.

The development was very rapid; in fig. 91 Nos. 2 and 3 show the stage of rot after six days, and No. 1 after 26 days.

A Bordeaux spray in early spring before the blossoms open is to be recommended. All affected parts should be pruned away and burnt in the winter, and care must be taken in the summer to remove all rotten Apples as soon as possible. Fruit in the fruit room should be examined frequently, and all decayed specimens collected and taken away, not left on the floor or in heaps, as the spores are light and may be carried some distance in the air and on the clothes. *D. M. Cayley.*

THE ROSARY.

POTTING ROSES FROM THE OPEN.

APART from economy the method of potting Roses from the open garden has much to commend it to those who desire to have pot plants for forcing. Once established, they possess better roots than grafted plants usually sold for the purpose. Plants potted from the open cannot be forced until they have been grown for twelve months outside, but if a few trees are potted annually after the first season there will be a stock each year.

I prefer to commence potting Roses from the open in October. Even if the plants are in bloom it matters not, for by then the earliest growths are well matured, and all later shoots are cut hard back.

It is a good plan to go to the nursery and select the plants, or, failing this, instruct the grower to pick out good, bushy, maiden plants, and see that they are sent with their roots well puddled in thin mud. Preferably the unripe shoots should be cut away before the plants leave the nursery, and all foliage removed; the ripened growths may also be cut back to about 15 inches. The plants should be worked on the Briar, the seedling Briar for preference. The roots should be trimmed back to about 5 inches, including the tap root, often found on the seedling Briar. If the plants were pinched back when young, good bushy specimens will be obtainable; but some varieties do not make bushy plants, therefore one must take them as they are.

Firm potting is necessary, and the potting stick should be used freely. I prefer to use 8-inch pots, although those 7 inches in diameter would do. Both the pots and the crocks must be scrupulously clean.

A compost of good fibrous loam two parts, well-rotted manure one part, with a little sharp sand added, provides a good rooting medium. The addition of a 6-inch potful of bone meal to two bushels of the soil is helpful. In some gardens it is customary to make a stack of loam with alternate layers of cow manure, and allow the heap to settle for twelve months before it is used. Should such soil be available rotted manure need not be added. Broken oyster shells may be mixed with the crocks.

After potting the plants place them on a layer of ashes in full exposure to sunshine. Water the roots copiously the second day after potting.

After three weeks plunge the pots over their rims in a bed of old Coco-nut fibre, ashes or tan, preferably in a sheltered place, where they will obtain sun during the winter but be protected from north and east winds.

I prefer to keep the plants thus plunged until the following June, removing them to a more open position and plunging the pots just below the rims as soon as danger from spring frosts is over. In very cold winters the plants may need protecting. This may be done by bending hooped sticks over them, and covering the sticks with mats.

The plants should be pruned fairly hard early in April, always cutting to dormant eyes pointing outwards. During the summer small sticks may be employed to correct any unequal growth. Feed the plants liberally during their growing season with liquid manure, and do not allow them to carry too many blossoms. If occasion arises the plants may be used to fill gaps in beds in the flower garden, keeping them in their pots.

In September the plants should be placed on their sides for a week or two to dry them off. They should be set up again in October, and top-dressed with a little good compost, consisting of half loam and half well-rotted manure. Such plants may be introduced into the forcing house any time from November to March. The very useful Polyantha Roses may be potted in similar fashion, using 6-inch pots. They may be gently forced the first year if desired.

Rambler Roses may also be potted in 8- and 10-inch pots in November, which is preferable to October, as the growths would not be ripe then.

The following varieties of Hybrid Teas are suitable for growing in pots:—Mrs. Geo. Shaw-

yer, Ophelia, Mrs. Chas. Russell, Mme. A. Chateau, Melody, Sunburst, Mrs. Aaron Ward, Pharisæer, Lieutenant Chauré, Duchess of Wellington, Lady Pirrie, Souv. de G. Prat, Hadley, Richmond, Liberty, Rose Queen, May Miller, Mrs. A. Tate and Mme. Mélanie Souper. Of Teas select Mrs. H. Stevens, Lady Hillingdon, Molly Sharman Crawford, Pernetiana: Mme. Edouard Herriot, Willowmere and Mrs. Wemyss Quin. Hybrid Perpetuals: Frau Karl Druschki, Mrs. J. Laing, Ulrich Brunner, Capt. Hayward, Coronation, Gén. Jacqueminot and Duke of Wellington. *Experience.*

WATER GARDEN.

NYMPHAEA GIGANTEA HUDSONIANA.

It has often been stated that this charming blue Nymphaea is the largest and most beautiful in form of all blue Water Lilies, and to that it may be added that it is the most continuous in flowering. In Mr. Leopold de Rothschild's gardens at Gunnersbury House, where the variety first appeared, flowers were produced in May last, and a succession has continued until the present time, for there are still flowers and flower-buds. *N. gigantea* had the reputation of being unmanageable in gardens, but it is pleasant to note that this variety is more amenable to cultivation.

ORCHID NOTES AND CLEANINGS.

HYBRID ORCHIDS.

(Continued from p. 194.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Cattleya Big Ben	B. Digbyana x C. Thurgoodiana	H. T. Pitt, Esq.
Brasso-Cattleya Doris	B.-C. Madame Chas. Maron x C. Lord Rothschild	Flory and Black.
Brasso-Cattleya Mars	B.-C. Mrs. J. Leemann x C. Maggie Raphael alba	Armstrong and Brown.
Brasso-Cattleya Nestor	B.-C. Madame Chas. Maron x C. labiata	Hassall and Co.
Brasso-Cattleya Pallas	B.-C. Digbyana-Mossiae x C. Warszewiczii-Sanderiana	Sander and Sons.
Brasso-Laelio-Cattleya General French	B.-C. Thorntonii x L.-C. George Woodhams	Armstrong and Brown.
Brasso-Laelio-Cattleya Margaret L. Hanbury	B.-C. Madame Chas. Maron x L. pumila praestans	F. J. Hanbury, Esq.
Cattleya Andromaque	triumphans x Warszewiczii	Monsieur Macon, 1913.
Cattleya Falco	Dupreana x Dowiana aurea	J. Gurney Fowler, Esq.
Cattleya General Russky	amabilis x Dowiana	Sander and Sons.
Cattleya Judah	Lord Rothschild x Hardyana	Sir Geo. L. Holford.
Cattleya King George	triumphans x Dowiana Rosita	Flory and Black.
Cattleya Lady Veitch	Ludemanniana alba x Warneri alba	Sander and Sons.
Cattleya Naidia	iridescens x Hardyana	Hassall and Co.
Cattleya Rabbi	Lord Rothschild x Ludemanniana	Sir Geo. L. Holford.
Cattleya Zenobia	Warszewiczii x Whitei	Sir Geo. L. Holford.
Cypripedium Gloria	Gaston Bultel x Prism	Sander and Sons.
Dendrobium Alpha	Regium x eusomum	
Dendrobium Bartelsianum	Rolfae x Wiganianae xanthochilum	
Dendrobium Ceres	Wiganianum x Melpomene	
Dendrobium Eleanor	Findlayianum x Euryalus Othello	
Dendrobium elegans	Wiganianae x Ophir	
Dendrobium Gattin Diamond	Melanodiscus Salteri x Wiganianae splendens	
Dendrobium Gattin Pearl	Brodiei x signatum aureum	
Dendrobium Gattin Pink	Wiganianum x Findlayianum	
Dendrobium Gattin Rose	Wiganianum x Linawianum	
Dendrobium Jupiter	Findlayianum x eusomum Eleanor	
Dendrobium Neptune	Ainsworthii Leechianum x Curtisii	
Dendrobium Orphanum	Brodiei x seedling unnamed	
Dendrobium Pallas	nobile x Ophir	
Dendrobium Princess Patricia of Connaught	Wiganianum purpureum x Euryalus rubens	
Dendrobium Queen of Gattin	Cybele x signatum aureum	
Dendrobium Royal Princess	aureum x Regium	
Dendrobium Royal Sovereign	Curtisii aureum x Regium	
Dendrobium sator	nobile album x Elwesii	
Dendrobium Uranus	Euryalus Othello Colossus x Orphanum	
Dendrobium viridescens	Wiganianum x aureum album	
Laelio-Cattleya Balmori	C. Hardyana x L.-C. Belfa	
Laelio-Cattleya Columbus	L. Jongheana x L.-C. Dominiana	
Laelio-Cattleya Edwena	L.-C. Sappho x C. Pittiana	
Laelio-Cattleya Eileen	L.-C. marginata x C. amabilis	
Laelio-Cattleya Erica	L.-C. St. Gothard x C. Empress Frederick	
Laelio-Cattleya Fulva	L.-C. Golden Oriole x C. fulvescens	
Laelio-Cattleya King Leopold	C. Leopoldii x L.-C. Callistoglossa	
Laelio-Cattleya marginata	L.-C. Colmaniana x L. pumila	
Laelio-Cattleya Minnie de Larninaga	C. Fabia x L. C. Bola	
Laelio-Cattleya Orphens	C. Schilleriana x L.-C. Lustre	
Laelio-Cattleya Pearl	L.-C. Norba x C. Gaskelliana alba	
Laelio-Cattleya Rosetti	Antione x blechleyensis	
Laelio-Cattleya Sarzon	L.-C. Lustre x C. Hardyana	
Laelio-Cattleya Serbia	L.-C. St. Gothard x C. Enid	
Laelio-Cattleya Soulangue	L.-C. Lustre x C. Dowiana	
Laelio-Cattleya Zenith	O. Mendeli x L.-C. Ingravii	
Odontioda Gloss	Odium triumphans x Oda Charlesworthii	
Odontioda Prunella	Odium Ilaryanum x Oda Thwaitesii	
Odontioda Vulcan	Odium Clytie x C. Noeziana	
Odontoglossum Victory	crispum The Baroness x seedling unrecorded	
Odontoloma Scylla	O. cirrhosum x M. vexillaria	
Sophro-Laelio-Cattleya Prospero	S.-L.-C. Danae x C. Lord Rothschild	

These Dendrobiums have been raised and flowered in the famous collection of Sir Jeremiah Colman, Bart, Gattin Park, Surrey (see Mr. Collier), in recent years, and some of them have been noted in the *Gardeners' Chronicle*, but not previously embodied in the list.

Sander and Sons.
Sir Geo. L. Holford.
Col. S. R. Clarke.
Sir J. Colman.
J. Gurney Fowler, Esq.
Sir Geo. L. Holford.
Sir J. Colman.
Sir J. Colman.
Mrs. Le Doux.
Sir Geo. L. Holford.
Hassall and Co.
Flory and Black.
Sir Geo. L. Holford.
Charlesworth and Co.
Flory and Black.
Sir Geo. L. Holford.
Armstrong and Brown.
R. G. Thwaites, Esq.
R. G. Thwaites, Esq.
Armstrong and Brown.
J. and A. McBean.
Sir Geo. L. Holford.

NOTE.—Laelio-Cattleya Cyrus (L. Gwenuie x C. Mossiae) (*Gard. Chron.*, October 2, p. 211) = L.-C. Corncrake (*Gard. Chron.*, August 15, 1914, p. 126).

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LI).

LES FLEURS À AALSMEER.

La situation économique dans la région floricole néerlandaise devient de plus en plus brillante, ainsi qu'il résulte d'un article récent publié par l'organe du Conseil horticole de La Haye. Cette constatation est de nature à nous réjouir car elle établit de nouveau que l'horticulture est beaucoup mieux qu'on ne l'eût cru à l'abri de la crise qui, dans l'opinion générale, devait surgir en cas de conflit international.

La prospérité des fleuristes d'Aalsmeer est due en partie aux nombreuses demandes d'Allemagne où l'on ne peut guère compter sur les fleurs du midi.

Les envois par colis postaux entraînent de gros retards, mais ceux par chemin de fer arrivent très rapidement à destination. Le trafic est tel que le personnel de la gare d'Aalsmeer est insuffisant pour l'assurer normalement.

Des marchands inconnus auparavant en Hollande y font actuellement des commandes importantes. Une firme, établie avant la guerre à Nice, s'est transportée à Aalsmeer, pour servir sa clientèle allemande.

En ce qui concerne la correspondance, les lettres d'Allemagne peuvent rester dix jours en route, mais les communications télégraphiques sont très régulières; aussi toutes les commandes sont-elles faites par télégramme.

On cite des ordres de 1,200 et même de 6,300 fleurs de Chrysanthèmes. Les prix sont élevés.

On cotait récemment : Chrysanthèmes 40 à 80 centimes pièce, les prix les plus élevés étant payés pour les Rayonnant; Roses 10 à 40 centimes, variété préférée Jonkheer J. L. Mock; Lis du Japon 40 centimes; Oeillets américains 20 à 25 centimes. Les ventes sont beaucoup plus actives que l'année dernière à pareille époque, et les prix bien plus rémunérateurs. La régularité des cours, profitable aux producteurs et aux acheteurs, est attribuée à l'extension prise par les affaires dans les maisons de vente coopératives auxquelles on recourt davantage.

On est convaincu en Hollande que si certaines fleurs du midi ne peuvent pas être produites dans les serres du Nord, Aalsmeer parviendra cependant à satisfaire dans une large mesure aux demandes de Roses, de Lilas et de Chrysanthèmes en Allemagne et en Angleterre. On s'attend à des prix très élevés. D'autre part, la production d'Aalsmeer pénétrera dans des milieux où elle était inconnue auparavant et où elle acquerra définitivement droit de cité. On en conclut à un brillant avenir pour la fleuristerie néerlandaise qui verra surgir de terre des établissements horticoles en grand nombre.

Cette note optimiste paraît confirmée par des renseignements d'autres sources. La situation a été bonne pendant l'été, même les plantes fleuries en pot se sont écoulées sans trop de difficulté. En ce qui concerne les fleurs d'hiver, la campagne doit être très rémunératrice. Seuls les producteurs de plantes vertes, Palmiers, Buis, etc., se plaignent, mais on fait remarquer qu'ils sont rares, à Aalsmeer, ceux qui n'aient que cette seule spécialité et qui ne s'occupent en même temps de forçage de fleurs coupées.

UN MARCHÉ CENTRAL D'HORTICULTURE À MOSCOU.

Nous lisons dans le *Bulletin* de l'office national du Commerce extérieur, à Paris, ce qui suit : "Un groupe important d'horticulteurs russes se propose en ce moment d'organiser à

Moscou, un marché central d'horticulture. A la demande de la Section de Moscou de la Chambre de Commerce russo-française, qui avait saisi l'office national du commerce extérieur de ce projet, cette institution a fait parvenir à la dite compagnie tous les renseignements utiles sur l'organisation et le fonctionnement des marchés aux fleurs de Paris, notamment une note relative au marché de la cité, qui peut servir de type pour la création d'établissements de ce genre. Les Allemands avaient souvent réussi à imposer, dans de pareils cas, soit leur intermédiaire onéreux, soit leur système d'organisation. La réalisation du projet russe actuel est donc de nature à développer le commerce direct de nos fleurs, qui, lui-même, entraînera celui de divers produits et appareils antérieurement fournis par des maisons allemandes." A. M.

NOUVELLES DIVERSES.

LES FORÊTS DOMANIALES EN BELGIQUE.

Les vols de bois se multiplient aux approches de l'hiver, les malheureux devant se procurer du combustible pour remplacer le charbon qui est à des prix inabordables. Certaines belles forêts subissent des déprédations irréparables car les coupes se font sans discernement. Comme l'hiver dernier, les Uhlans doivent intervenir : ils parcourent les forêts en tous sens. Les pillards qui se font prendre sont sévèrement punis. On leur inflige des peines d'un an de prison et de 1,000 francs d'amende.

LA CRISE DES POMMES DE TERRE.—A la suite de l'établissement, en Belgique occupée, de prix maxima pour les Pommes de terre, les marchands ont décidé de faire la grève, parce que la marge de profit tolérée leur paraît insuffisante. On ne les voit donc plus au marché.

On prend également des mesures en Autriche-Hongrie, pour éviter un renchérissement des Pommes de terre au printemps prochain. Toute la récolte doit être réquisitionnée, mais les agriculteurs refusent de livrer leurs produits au prix maximum fixé par le gouvernement. Des mesures sévères vont être prises et les producteurs qui résisteraient verront leur récolte saisie de force.

LA CONTREBANDE.—Un nouvel essai d'introduction de contrebande de guerre en Allemagne vient d'être découvert à Nimègne (Hollande). Quatre grands paniers "de fleurs" présentés pour l'exportation contenaient en réalité un tonneau d'huile ! Le truc paraît assez grossier et n'a sans doute pu être pratiqué longtemps.

LES OGNONS DU PORTUGAL.—Par décision du gouvernement portugais, l'exportation des Oignons n'est autorisée qu'à certaines époques et à condition que le prix de détail dans le pays ne dépasse pas 2 centavos le kilo. C'est là une nouvelle mesure résultant de la rareté des comestibles qui, à la suite de la guerre, se fait sentir dans tant de pays.

LES FLEURS DU MIDI EN ALLEMAGNE.—Il paraît que, malgré le boycottage des produits français et italiens, beaucoup de fleurs sont encore expédiées aux boutiques allemandes. Les producteurs indigènes font une violente campagne contre l'emploi de ces produits. Ils accusent les marchands de faire semblant d'ignorer l'origine des fleurs et de la verdure importées. On s'en prend aux intermédiaires offrant, de pays neutre, notamment de Suisse, des fleurs qui seraient nécessairement d'origine ennemie. On publie la correspondance adressée par des détaillants allemands à des firmes italiennes qui

auraient simplement transféré leurs bureaux en Suisse. Les opérations seraient conduites également par des déserteurs et réfractaires allemands établis près de la frontière.

Il semble établi que beaucoup d'Allemands, soit par esprit de lucre, soit qu'ils nourrissent à l'égard des populations de la Péninsule moins de prévention qu'à l'égard de celles de France, ne voient pas d'inconvénient à acheter des fleurs italiennes. Sans doute recule-t-on devant les hauts prix atteints par les fleurs de Hollande ou devant la perspective de devoir se tirer d'affaire uniquement avec le muguet "fabriqué" en Allemagne.

LÉGUMES D'AUTOMNE.—A la dernière exposition de Vincent Square, la maison Sutton, de Reading, présentait une collection de légumes provenant de semis faits au début du mois d'août. Outre des espèces dont la production en automne n'a rien d'extraordinaire, telles que le Navet, la Carotte, l'Endive, l'Épinard, on en remarquait d'autres qui sont obtenues plus généralement en culture principale, comme la Pomme de terre, le Haricot, le Pois, et dont la qualité était de nature à surprendre quelque peu en présence des conditions dans lesquelles on les avait cultivées. La présentation de ce lot avait pour but de montrer le parti qu'on peut tirer du terrain pour augmenter à bref délai l'approvisionnement de légumes indigènes, question d'actualité en temps de guerre.

VARIÉTÉS DE FRUITS DU CONTINENT.—A la même exposition, le pépiniériste Bunyard, de Maidstone, avait en l'intéressante idée de grouper sa collection de Poires suivant les pays d'origine. On pouvait s'y rendre compte de l'importance acquise en Angleterre par les obtentions des pomologues français et belges, car le groupe "anglais" était moins nombreux que celui des deux pays alliés. Il est juste de reconnaître que les Anglais ne pouvaient pas, en regard à la saison, être représentés par leurs variétés hâtives, qui sont les mieux connues au Continent. Si, comme de juste, le lot "français" était le plus important, la qualité du lot "belge" était, d'une façon générale, la meilleure. Nous y avons relevé de beaux spécimens, notamment de Beurré d'Hardenpont (connue ici sous le nom de Glou Morceau), Joséphine de Malines, Durondeau, Beurré Diel, Beurré Six, etc.

KORT OVERZICHT VOOR DE VLAMINGEN.

Berichten uit Holland melden dat de toestand bij de Aalsmeersche bloemenkwekers uiterst goed is. De moeilijkheden die de Duitsche bloemisten tegenkomen in het aanschaffen van Fransch en Italiaansch goed, verplichten hen meer in Holland te koopen en hogere prijzen te geven. Rond Aalsmeer meent men dat die toestand niet alleen voordelig is voor den tijd van den oorlog, maar ook voor later een verstrekkende faam aan de Hollandsche kweekers zal verzekeren.

In Duitsche vakkringen wordt echter beweerd dat nog veel bloemen van vijandelijken oorsprong, langs Zwitserland ingevoerd worden.

In Rusland is men voornemens eene Centrale tuinbouwmarkt in te richten. Men zal alzoo middelen kunnen nemen om den handel van Fransche waar aan den Duitschen invloed te onttrekken.

Met het naderen van den winter wordt opnieuw veel hout in de Belgische bosschen gestolen. Als gevolg wordt er groote schade aangericht in de jonge beplantingen.

NOTES ON CONIFERS.

XI.—CUPRESSUS LAWSONIANA.*

I HAVE now to deal with the small-fruited Cypresses, included in the section *Chamaecyparis*. The best-known and most widely cultivated of these is the Lawson Cypress, which commemorates Charles Lawson, the famous Edinburgh nurseryman, and originator of the elaborate work on the Conifer, the *Pinetum Britannicum*.

Cupressus Lawsoniana has its native habitats in the coniferous forests of South-Western Oregon and North-Western California in a very moist climate, being most abundant and luxuriant in a region below 3,000ft. altitude, where it comes under the influence of ocean winds. It grows in a mixed forest, associated with Douglas Fir, Sitka Spruce, Hemlock, and Thuya. Sargent † says it attains its largest size on the western slopes of

The Lawson Cypress is one of the most useful Conifers we have. It will grow on almost any soil, and is unaffected by the severest frost.‡ Its extreme hardiness in this country is remarkable when we remember the mildness of the climate in which it grows naturally, where severe frosts are unknown. It first came into cultivation in 1854, when Murray sent seeds from California to Messrs. Lawson, and the specimen figured at p. 194 of *Pinetum Britannicum* is one of the four original plants then raised. It was 11 feet 2 inches high after 11 years' growth. In 1855 a further supply of seed was received in this country, and the trees soon became common in cultivation. It has proved extremely variable in gardens, and as many as 50 varieties have been described, one of which, *erecta viridis*, is reproduced in fig. 93. Some of these are very distinct in form and colour, but others are hardly worth distinguishing. The Lawson Cypress pro-

60 feet high at Canford Manor, Dorset; Belvoir Castle; Leaton Knolls, near Shrewsbury; Willey Hall, Shropshire; Penrhyn Castle, Murthley; Dupplin Castle, near Perth; Moncrieff House, Shabbally, Dumfries; Kilmacurragh, Co. Wicklow; and Castlewellan.

There are fine avenues of Lawson Cypress at Brickendon Grange, Hertfordshire, and Royston Hall, Downham, Norfolk.

Cupressus Lawsoniana yields a timber which is highly valued in its native country. Sargent describes it as light, hard, strong, and very close-grained, abounding in fragrant resin. It is very lasting in contact with soil, and takes a good polish. Its agreeable scent makes it a very desirable wood for the insides of cabinets and wardrobes. But although much used in America for constructive and other purposes, its commercial value does not appear to be much recognised in Europe. A. Bruce Jackson.



FIG. 92.—CUPRESSUS LAWSONIANA: BRANCH WITH CONES; REDUCED ONE-THIRD.

[Photograph by E. J. Wallis.]

the coast range and foot-hills between Port Gregory and the Coquille River, where it is the principal tree in a nearly continuous forest belt, about 20 miles in length and 12 in width. Here it sometimes attains a height of 200 feet with a bole 35 feet in girth. The reddish, spongy bark is often nearly a foot thick, and the habit of the tree, with its tall and often twisted trunk, is consequently quite different from that which it assumes in English gardens, where it exhibits dense masses of foliage covering the stem to the base.

* *Cupressus Lawsoniana*, Murray, in *Edin. New Phil. Journ.*, I., 292, t. 10 (1855); Hooker, in *Bot. Mag.*, t. 5581 (1866); Murray, in *Lawson Pinet.*, Brit., II., 191 (1866); Sargent, *Silva N. Amer.*, X., 119, t. 531 (1896); Kent, *Veitch's Man. Conif.*, 265 (1900); Elwes & Henry, *Trees of Great Britain and Ireland*, V., 1260 (1910); Clinton-Baker, *Illustr. Conif.*, II., 73, f. 3 (1909); Bean, *Trees and Shrubs*, I., 444 (1914).

† *Op. cit.*

duces an extraordinary quantity of seed (cf. fig. 94, N and O) even in a young state, and in a single batch of seedlings great variation is often observable. It is said that a pint of seed weighing $\frac{1}{2}$ lb. contains over a quarter of a million seeds.§ As regards specimen trees, there are many good examples to be found in the British Isles. One of the best on record is at Eggesford, Devon, which Elwes* measured in 1906 and made to be 65 feet high by $6\frac{1}{2}$ feet in girth, but he mentions a still taller tree at Singleton Abbey, Glamorgan, the seat of Lord Swansea, which was said to be 75 feet high by $3\frac{1}{2}$ feet in 1906. Elwes also refers to trees from 50 to

‡ Masters in *Journ. Roy. Hort. Soc.*, XIV., 433 (1896), refers, however, to the fact that the young growth of Lawson's Cypress in the neighbourhood of London were severely cut by the memorable frost of February, 1895.

§ See T. Wain, *Future Forest Trees*, 94 (1905).

* *Op. cit.*

PLANT NOTE.

KNIPHOFIA ALOIDES.

KNIPHOFIA ALOIDES, known in many gardens as *Tritoma Uvaria*, is one of the most decorative hardy flowering plants. In these gardens there are clumps producing 70 to 80 heads of bloom. The plants were here 41 years ago, and how long before I do not know. In some years they lose every leaf in winter, but invariably recover. These have never produced seeds, but earlier kinds seed freely, and I have many plants in various tones of red, yellow, and red and yellow, all from seeds. Much time is saved by sowing as soon as the seeds have ripened, wintering the plants in a cool house, and repotting as required, or shifting the plants direct into 7-inch pots. B., Tynninghame Gardens, Prestonkirk.

THE BULB GARDEN.

EARLY AUTUMN CROCUSES.

It is somewhat surprising that more gardens do not contain specimens of the various species of *Crocus* that flower in the autumn. It is true that the individual flowers are delicate and quickly damaged by rough weather, but there are few autumns in which there are not some calm, bright, sunny days in September and October that allow the *Crocuses* to show us their beauty. Their scent, too, when the flowers stand wide open in the mid-day sun is deliciously sweet.

If we except the rare yellow-flowered *Scharojanii* and its relative *C. vallicola*, which flower in August, the display begins with the pale pinkish lilac of *zonatus*, so called from the belt of bright orange that runs round the throat of the flower on the inner side. This is closely followed by *speciosus* and *pulchellus*. The former, in some of its forms, must be one of the largest of all *Crocuses*, standing, as it does, 6 or 8 inches high, with expanded flowers 4 or 5 inches across, remarkable for the network of conspicuous veins that cover the segments. *Pulchellus* is smaller, but always has a peculiarly refined appearance, with segments of a bright bluish lilac. Of *speciosus* there is a charming white form with deep orange styles.

All these species are natives of Asia Minor, but vary apparently in their requirements. *Scharojanii*, for instance, needs to be kept growing all the year in a moist, cool position, where the leaves still remain when the flowers appear. *Speciosus* and *zonatus* seed and increase rapidly in warm, sandy soil, the former multiplying, also, by little off-sets at the base of the corm, but, for some reason or other, *pulchellus* does not seem to increase so rapidly when grown in the same conditions.

One of the most beautiful of all the species of *Crocus*, and certainly the most distinct, is *iridiflorus* from the mountains of Transylvania. The three inner segments are only about half the length of the outer petals, and form an inner cup which is filled with the finely branched lilac-coloured style. There is also a pure white form with a white style, which is no less vigorous than the type, of which the colour varies from deep to pale purple lilac.

Another richly coloured species that also appears about the same time in early October is *medius*, from the Riviera, and it is remarkable for the contrast of the finely divided bright scarlet stigma with the bright purple of the segments of the flower.

Hadriaticus is one of the first species of which the leaves appear with the flowers. These open early in October, and the white form is perhaps the commonest, though purple and even yellow varieties exist. The flowers are rather small and delicate, but the appearance of the plant is certainly enhanced by the early development of the leaves. *Hadriaticus* is closely allied to *sativus*, which, however, seldom, if ever, consents to flower in sandy soil. It appears to require a stiff loam and good cultivation, but given the right conditions it must obviously flower freely, for it is the source from which true saffron is obtained.

Salzmännii, from the South of Spain and Tangier, is another species, of which the leaves are well developed before the flowers appear. The colour is a deep purple lilac, and the plant succeeds well in rich, sandy soil.

About the middle of October there appear the leaves, and soon afterwards the flowers, of the really magnificent *Crocus marathensis*. The creamy white flowers are remarkable for their large size, and particularly for their substance. The segments are broad, the open flower forms a cup rather than a star, and the orange-scarlet style provides a delightful contrast.

At the same time, or slightly later, *ochroleucus* sends up its numerous slender flowers, which

never seem to open very widely, but remain closed in to show off more clearly the contrast between the pure white of the upper part of the segments and the deep yellow of their base. This *Crocus* sends up its leaves almost simultaneously with the flowers.

Tournefortii, from the islands of the Greek Archipelago, is a richly coloured little species with deep purple flowers and bright red styles.

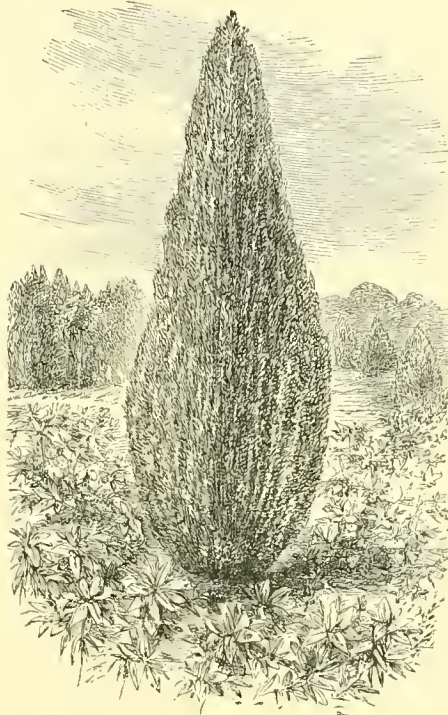


FIG. 93.—*CUPRESSUS LAWSONIANA* VAR. *ERECTA VIRIDIS*.
(See page 272.)

It is one of the few autumn *Crocuses* of which the leaves appear some time before the flowers expand.

From the Pyrenees comes *nudiflorus*, which is remarkable for its habit of spreading by means of corms, which develop at the extremity of stolon-like growths. The flowers are large, of a deep rich, uniform purple, set off by the orange-yellow styles.

There are a number of other species of *Crocus*

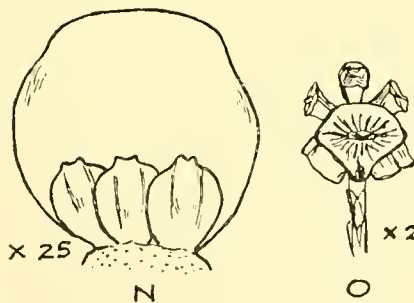


FIG. 94.—*CUPRESSUS LAWSONIANA*.
N. Scale of young cone, showing ovules; O, Ripe cone.
(See page 272.)

that flower in the early autumn, but as they are mostly rare in cultivation or difficult to obtain, it seems unnecessary to include them here. All should be planted 2 or 3 inches deep, not later than August, and the corms may with advantage be lifted and replanted every second or third year. W. R. Dykes, *Charterhouse, Godalming*.

THE BAMBOO HAT INDUSTRY.

It is probable that there is no plant which provides material for a larger number of useful articles than the Bamboo. In every civilised and uncivilised community where the Bamboo is found, its uses are manifold and ever increasing. Quite recently a new industry has sprung up in Manila, Java, China, India, Ceylon and other places where the Bamboo flourishes—that of making Bamboo hats, chiefly for export to Europe.

It may be remarked that the mandarins of Corea have always worn typical wide-brimmed hats made of Bamboo strips; and Bamboo hats, roughly woven and deep yellow in colour (locally called "rotin") have always been a favourite form of headgear in Manila. But these hats, as well as the Chinese varieties, "chapeaux chinois," and the Cuban ones woven from Bamboo strips, whalebone, textile fabrics, pith, etc., all of rude workmanship and quite cheap and common, would find no European market. Labour, however, is becoming scarce in Europe, and the production of Italian, Tuscan and Leghorn hats is likely in the near future to fall far short of the demand. An impetus has been given to enterprising firms in the East, and well-finished articles now being shipped to Europe will partially take the place of ordinary straw or panama hats. Though their shape differs somewhat, according to the source whence they come, these Bamboo hats are chiefly of the picturesque "sombbrero de jipijapa" shape, which has, in late years, grown considerably in popularity. The whole Bamboo hat industry in its new form is most interesting, and no one would have believed a few years ago that the natives, even under European guidance, could have turned out such well-finished specimens. The natives cut down the stems and deftly split them into strips. When the scraping and paring is finished the thongs are laid out to dry; they are then gathered up and brought to the workshops, where they are hung in pliable bundles within reach of the native workers, who weave them into shape with surprising speed. Women and children are chiefly employed in the making of Bamboo hats, the men doing the shaping of the finished articles and the packing.

When the cone-shaped hats are woven (all but the brim, which is left unfinished, and presents a fringe-like edge), they are laid out to dry in the sun. It is very picturesque to see the natives running along carrying huge bundles of wide-brimmed shapes, and laying them evenly on the ground, row by row. The field, which was empty and barren on their arrival, is quickly transformed by what looks like a mammoth Mushroom growth. These shapes are subsequently soaked in water, and then dried again, after which processes they are finished off and lined. The plaiting of the Bamboo strips varies, as it does in the case of ordinary straw hats. Manila hats come to Europe made in two pieces, one above the other, and joined at the brim to give the necessary consistency. Otherwise, being very soft and pliable, they would not keep their shape. They are sent from Manila to Java, where they are given definite shapes, according to the dictates of fashion, and sometimes trimmed. The shaping is done by machinery. They are blocked into shape by the aid of heat and powerful pressure. A damped linen cloth is placed over them, and is taken off when they are withdrawn from the machine, revealing a finished cone-shaped hat, sometimes stiffened with gelatine, at other times dyed or simply bleached. After the hats are finished they are taken to a sorting room, and a European expert divides them according to quality and finish. Then the stacks of sugar-loaf shapes, tightly packed one inside the other, are fixed in wooden cases in even rows. A native jumps on them, and with the aid of a large weight makes them set in a compact mass, so that they cannot shift and become spoiled during the journey.

Other hats which are now being exported are made from wood pulp; they are waterproof and easily dyed and finished to look like felt and straw. *E. S. Romero-Todesco.*

NOTICES OF BOOKS.

THE SPIRIT OF THE SOIL.*

Mr. Knox has had special and frequent opportunities of following Professor Bottomley's work on nitro-bacterine, and on the production of bacterised peat, and in the present volume he gives an extremely interesting and enthusiastic account of the work.

Mr. Knox is a stalwart champion, and maintains the efficiency of nitro-bacterine—the preparation which was sent out some years ago by Professor Bottomley as a means of inoculating leguminous plants with nitrogen-fixing bacteria. The general consensus of opinion among experts in this country is adverse to this contention. But this was long ago. Now we have another preparation—bacterised peat—on which Professor Bottomley's and all our hopes are fixed. It has given remarkable results at Kew and elsewhere, and the illustrations in Mr. Knox's volume offer striking testimony to the effects of even small dressings of bacterised peat. Nevertheless, for the reasons set forth at length in our leading article, we are of opinion that yet more evidence is necessary before the claims on behalf of bacterised peat may be accepted unreservedly. Tests by means of treated and control (untreated) plants are fickle things. They require to be repeated many times over before certain conclusions may be drawn from them. Some of the evidence adduced by Mr. Knox is, we admit, very strong and likely to convince the layman, but, on the other hand, Mr. Knox admits occasionally evidence which, in our opinion, is of little worth. Thus, on p. 146 appears the following account of a chance experiment. Four Potatoes (weight not stated) were planted in sterilised moss soaked in humogen extract, watered from time to time, and occasionally sprinkled with a water-extract of humogen. The Potatoes yielded 2lbs. 10½oz. Those who have grown new Potatoes from old in a dark cellar, with nothing at all in the way of humogen extract, will not be very greatly impressed with the result obtained in the above experiment.

A citation of words spoken by the reviewer—which appears in Mr. Knox's volume—represents our present opinion. "He could put it that Professor Bottomley was able to take material of such commercial value used mainly for the making of fuel and oil, and extract from it not only the humates in a form in which they could be used for plants, but also to use these humates as a seed bed in which the Azotobacter—a nitrogen-fixing organism—could thrive. If more extended trials than those so far undertaken could establish that Professor Bottomley could do these two things he would have earned the encomium of Swift for those who made two blades of grass grow where one grew before." For the present this important matter awaits fuller evidence; but in the meantime we recommend strongly to our readers Mr. Knox's well-written volume. We hope, moreover, that all who have the leisure for experiment will obtain some of this material, compare its effects both on pot plants and plants in the open with those obtained with ordinary organic and inorganic manures, and report the results in these columns. Professor Bottomley, we know, desires nothing more than a fair trial for bacterised peat, and we believe that he will be willing to supply small quantities for the purpose of such trials.

* *The Spirit of the Soil, or An Account of Nitrogen Fixation in the Soil by Bacteria and of the Production of Auxinones in Bacterised Peat*. By Gordon D. Knox. With a foreword by Prof. W. B. Bottomley. Pp. 242. (London: Constable & Co., Ltd.) 1915. Price 2s. 6d. net.

The Week's Work.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

SOPHRONITIS GRANDIFLORA.—This little scarlet-flowered plant will succeed if grown in either the cool or the intermediate house. From now onwards until the plants have flowered and growth is finished, they should be watered whenever the soil becomes at all dry. Frequent root disturbance must not be practised, and only a small quantity of soil is needed. Small pans, well provided with drainage material, prove the best receptacles, and to each a wire handle should be attached, so that the plants can be suspended near the roof-glass, as they need plenty of sunlight.

SOPHRONITIS HYBRIDS.—These are probably represented in every collection. Where several kinds are grown a few will be in flower at every season, and in consequence the work of repotting or top-dressing is done at different times. A good plan is to arrange the plants in a batch at the cooler end of the Cattleya house or to suspend them two feet from the roof-glass. Their requirements can thus be more readily ascertained than if scattered about among the larger specimens. The compost should be such as is used for Cattleyas, but it must be cut up rather fine, and ample drainage material placed in the bottom of each pot or pan. Throughout their growing season the plants need plenty of water, but moisture must not be afforded unless it is really required, as many of the primary hybrids of *S. grandiflora* are not over-robust. Careful watering and freedom from insect pests are important details in the cultivation of these plants.

HABENARIA.—Habenarias are tuberous-rooted and deciduous, and therefore a decided rest is needed. During their season of repose it will be necessary to examine the plants occasionally to ascertain whether the tubers are shrivelling from lack of moisture or whether drip from the roof is causing the soil to become excessively wet. Both extremes must be prevented, but very little water will be required until fresh growth is apparent in the spring.

BRASSIA.—This genus is closely allied to *Oncidium* and *Miltonia*, but the flowers lack colour when compared with those genera. At the same time such species as *B. brachiata*, *B. caudata*, *B. Lawrenceana*, *B. maculata* and *B. verrucosa* are interesting. All may be grown in the intermediate house or at the cooler end of the Cattleya division. Repotting should be done when the new growth begins to root, and the usual compost for Orchids may be employed, with the addition of a few broken leaves. Brassias are shade-loving plants, and care must be taken to protect them from strong sunlight. The supply of water at the roots must be in accordance with the season and condition of growth. At no time should the roots be very dry.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

THE HERBACEOUS BORDER.—The hardy flower border is giving a bright display of bloom longer than usual, especially where Dahlias form part of the scheme. Although Dahlias cannot be classed as hardy flowers, their claims to be included in the herbaceous border must not be overlooked if a bright effect is desired from the end of August onwards. It is advisable now to sacrifice the remaining blooms to permit of any necessary ground work being done, the nature of which will depend on the condition of the border and plants. This may mean only a general tidying for the winter months by cutting down subjects according to their nature, forking and top-dressing the borders with decayed manure and relabelling plants that require this attention. It is usually neces-

sary to make some re-arrangement of the plants, and notes taken when the plants were in bloom will be the best guide as to this. In dealing with old borders, the soil of which has become exhausted, all the plants should be lifted, the ground trenched 2 feet to 3 feet deep, and enriched with animal manure and burnt refuse from the garden fire. Bone meal scattered over the top spit will form a good fertiliser. In lifting the plants place those of one kind together, but take care to keep the varieties distinct and see that they are labelled correctly. It may also be an advantage to add the height and colour to the name. Replanting may take place almost immediately provided the soil is in a suitable condition. When the ground is of a heavy nature prepare a few barrowfuls of a lighter compost, such as old potting soil, to work around the roots of the less vigorous kinds. A sprinkling of specially prepared soil at the roots will be beneficial to all the plants. Subjects of a tender nature and novelties should be grown in a frame for the winter with the light tilted to ward off heavy rains, and planted in spring. In dividing old clumps of strong perennials for replanting choose only the sturdy young outer portions and discard the remainder. The scheme of planting will depend largely on individual taste, but on the whole fairly bold irregular grouping, according to the size of the border, is the most satisfactory. The height should be graded from back to front, but not too strictly, and, in any case, a dull uniformity must be obviated by arranging tall, graceful subjects, such as *Cimicifugas*, *Veronicas*, *Astilbes*, *Campanulas*, *Thalictrums*, *Gladioli* and *Galtonias* at intervals. In planting to obtain a colour scheme the best effect is probably secured by massing the bright colours throughout the border, and using white, lemon and pale yellow as small dividing groups.

BEGONIA, GLADIOLUS AND GALTANIA.—Lift the tubers of Begonias before frost damages them. Spread them out in a frame to dry and allow the stems to drop off naturally. When thoroughly dry clear the tubers of soil and most of the roots, afterwards placing them in boxes in sand, hollow side downwards. Store the plants in a dry, cool place safe from frost. The corms of Gladioli and Galtanias may be treated similarly, excepting that the hulbs need not be covered when stored.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LIXLITHGOW, Hopetoun, South Queensferry, N.B.

FIOS.—If ripe Figs are required in April the trees should be prepared for forcing. Select specimens that have previously been forced, as the wood of these is much more likely to be matured than in the case of later trees. Repotting is best done earlier, but any trees that need fresh soil should be attended to at once. The branches must be pruned, but if they have been regularly attended to during the growing season there will be very little growth that needs removing. It is most important to cleanse the trees thoroughly, and for the destruction of brown scale the shoots should be dressed with a solution of soft soap and paraffin. The specific should be well brushed into the wood, but care must be taken not to wet the young Figs with it. As a further preventive against attacks of scale and other insects, renew the stakes, as these offer a harbour for pests. Let the house be cleansed thoroughly, remove all loose material from the borders, and whitewash the walls. Forcing must be done very gradually for a few weeks; a maximum night temperature of 50° will be suitable. As the trees show signs of growth, plunge the pots in a bed of fermenting materials, consisting of three parts Oak or Beech leaves, and one part fresh stable manure. The leaves and dung should be turned frequently before they are mixed together, and care should be taken to prevent excessive heat through fermentation. The roots require but very little water until top growth is fairly active. Permanently planted trees intended to be forced must also claim attention. If the roots need attention the work should be done at once. Where the growth is so strong as to be unfruitful lift

the trees entirely and replant them. Opportunity should be taken to renew the drainage, and the extent to which this is done must be governed by the nature of the subsoil. In replanting the trees, use some fresh compost—good heavy loam mixed with a suitable quantity of lime rubble will do; but do not use manure, which is best applied on the surface as required.

STRAWBERRIES.—Place pot plants intended for early forcing under protection. Plunge the pots to the rims in a bed of dry leaves or ashes in a pit or cold frame. Meanwhile place the lights in position only in times of heavy rains, snow or severe frosts, as the plants should receive an abundance of sunlight and air. Plants intended for forcing later may remain out-of-doors for a time, provided the pots are plunged in ashes well over the rims, and the plants afforded slight protection with dry straw or dried Bracken Fern. Before placing the plants in the forcing house let them be top-dressed. Remove decayed leaves, and also any weeds or mossy growths from the surface of the soil, then top-dress the roots with a compost, consisting of rich loam, soot, and a small quantity of artificial manure. Press the compost moderately firm, and leave space for watering.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHCHILD), Buckinghamshire.

PEACHES.—The salient points in the successful cultivation of Peaches out-of-doors are suitable soil, ample drainage and a warm situation. I have no hesitation in stating that the largest percentage of losses among Peaches out-of-doors is due to an unsuitable soil and stagnation at the roots. Those who plant trained Peaches or Nectarines should remember that they are planting for the future as well as for the present, for under proper management and suitable conditions the trees will continue in bearing for a great number of years, and many more than when grown under glass. If the natural soil is suitable it will need little preparation, provided the subsoil is sufficiently porous. One of the most suitable soils for Peaches is fibrous or sandy loam, and to this should be added a moderate quantity of well-decayed farmyard or cow manure. Heavy clayey soils need improving by a liberal dressing of road grit or shingly gravel. The latter is most useful where road grit cannot be obtained. These materials should be incorporated deeply into the soil by digging or trenching. During the growing season the trees should be syringed daily, and they must not lack moisture at the roots at any time—summer or winter. If syringing and watering are neglected insect pests will appear. Under no circumstances permit the shoots to be overcrowded, and this precaution must be borne in mind when the branches are being pruned and fastened. During recent years many valuable additions have been made to the list of desirable varieties. The following sorts ripen their fruits, as a rule, in the order given:—*Amsden*: A variety of American origin, ripening its fruits about the middle of July. The fruit is above medium size, well coloured, and of good flavour: the tree is both hardy and free in growth. *Alexander*: A large, handsome, richly-coloured variety, with melting, sweet flesh. The tree is a good grower, and ripens its fruits in the middle of July. *Waterloo*: An American Peach of medium size, valuable on account of its earliness and the ease with which the fruits develop. This variety appears to possess the peculiarity of stoning and swelling its fruits at the same time. It is in season from the middle to the end of July. *Early Grosse Mignonne*: The fruits of this variety are above medium size, beautifully coloured, and of excellent flavour. It is one of the best second early Peaches, and is ripe at the beginning of August. *Peregrine*: A variety of recent introduction, and one of the very best, producing large, highly-coloured fruits of excellent flavour. It is an acquisition to the list of second early varieties, ripening early in August. *Dr. Hogg*: A well-

known, luscious, melting Peach, which, however, requires a warm situation and soil. Ripe at the middle of August. *Dymond*: One of the most useful Peaches, and should be included in every collection. A clean, hardy, healthy grower, producing fruits of the first quality. Season, middle of August. *Alexandra*: A valuable mid-season variety of good constitution, and not subject to mildew. The flesh is white and easily separates from the stone. Ripe at the end of August and beginning of September. *Crimson Galande*: A distinct variety with a highly-coloured, rich and melting flesh. The tree is both hardy and prolific. Middle to end of August. *Grosse Mignonne*: A well-known variety with red-tinged flesh, highly coloured on the exposed side. It is one of the best mid-season varieties, and is ripe at the end of August and beginning of September. *Bellegarde*: This variety is a prolific cropper, producing fruits of first size and quality, even under adverse conditions. This variety is generally regarded as one of the best for outdoor cultivation. Ripe middle of September. *Stirling Castle*: A finely-coloured variety of rich flavour; one of the best and most reliable sorts. The fruits ripen in September. *Late Devonian*: A large, handsome, deliciously-flavoured Peach, with a rich, crisp flavour of its own, and keeps well. In season middle of September. *Violette Hâtive*: A hardy, prolific variety producing large, handsome fruits of a rich flavour. One of the hardiest and best of Peaches. Ripe middle to end of September. *Sea Eagle*: A good late variety, but requires a warm autumn to produce fruits of good flavour, and is, moreover, rather pale in colour. Ready end of September. *Golden Eagle*: A large, handsome variety, with fruit of a bright Apricot colour. The flavour is rich and vinous. A very desirable variety, which keeps well. It should be planted against a wall in the warmest position, and is ripe at the beginning of October.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady Nunburnholme, Warton Priory, Yorkshire.

GREENHOUSE CYCLAMENS.—The earliest plants of *Cyclamen latifolium* which are developing flowers will be benefited by liquid manure at the roots on two or three occasions weekly and a surface dressing of fertiliser from time to time. Transplant seedlings when they are large enough to handle, and treat them as recommended on p. 150 in the issue for September 4. Growth must not suffer a check from the time the plants start into leaf until they finish flowering.

STOCKS.—Well-grown Stocks are scarcely excelled by any other plant for winter flowering. Those which were raised from a late sowing should be repotted as they require it, using good fibrous loam mixed with a little leaf-mould and sand. The plants will grow best in a cool frame facing south, which must be properly ventilated in accordance with the weather. If the plants are protected from severe frosts they may remain in the frames in winter. Plants of the earliest batch may be drawn upon as occasion requires, and brought into a light house with a temperature of 50°.

CINERARIAS.—The earliest plants will soon be throwing up their flower spikes, and if it is necessary to hasten them into bloom the temperature may be raised a little. Successional plants should be brought forward as the demand requires. Plants which are still in cold frames should be placed in a glasshouse, as they are soon damaged by frost. Continue to feed the roots with liquid manure, which may be used more plentifully and oftener as the plants increase in growth. Lightly fumigate the house at short intervals, and guard against the leaf-mining maggot, which would soon disfigure the plants.

VIOLETS.—The weather has been very favourable for the plants since they were placed in frames; it has not been necessary to place the lights in position either by night or day up to the time of writing. The light should only be closed during times of severe

frosts or heavy rains, for to have Violets in flower well through the winter the plants must not be coddled in the autumn. Remove the dead flowers and foliage frequently, and dust the plants lightly with soot, lime or any other material that will act as a preventive of slugs and red spider.

FREESIAS.—Where these useful plants are required in flower early the more forward specimens may be grown in a slightly higher temperature. Arrange the plants close to the roof-glass. Secure the foliage to stakes, for it soon becomes damaged if this precaution is neglected. Commence feeding the roots with weak liquid manure as soon as they have filled the pots, increasing the strength as the plants continue to grow.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

LETUCES IN COLD PITS.—Plants which are well advanced in growth should be afforded an abundance of fresh air; on dry days the lights should be removed. The lights should be placed in such a position as to protect the plants from rain without producing a close atmosphere. Two bricks placed at the top and bottom of the pit will allow a free circulation of air during damp weather. Keep the soil hoed between the rows and apply a sprinkling of lime around the edge of the bed to keep slugs in check.

RHUBARB.—As soon as the foliage has died down Rhubarb roots intended for forcing should be lifted and allowed to remain in the open until they are required. Roots which have been planted for three or four years are large enough, and will give better results than those which may have been in the ground for a longer period. The roots may be forced in a Mushroom house or similar structure, provided sufficient heat can be maintained to keep the temperature at 55°. Place the roots within a few inches of each other, and fill the space between them with fine, rich soil, made moderately firm with the hand. If the roots are dry they should be watered carefully before the soil is placed around them. The number of roots to be lifted at one time will depend on the quantity of Rhubarb required; from six to twelve good roots will be sufficient for an ordinary supply. Where large quantities are required, it is best to select a flat pit with a gentle bottom heat.

SEAKALE.—The forcing of this vegetable should not be undertaken before the crowns are quite ripe. Seakale is one of the easiest vegetables to produce in winter, provided good one-year-old roots are available. Where only a small supply is necessary the roots may be placed thickly in large, deep pots filled with rich soil, which should be moderately moist, so that very little water will be necessary until growth commences. Press the soil moderately firm amongst the roots. The pots may then be placed in heat as required. In order to thoroughly blanch the growth other pots of the same size should be inverted over the crowns and all light excluded by packing the crevices with damp moss. If a large supply of Seakale is required, a gentle hotbed should be made in a deep pit, which can be kept quite dark either by wooden shutters or covering the roof with mats or some other light material. The soil in which the crowns are inserted should be at least 9 inches deep. Care must be exercised that the bed does not become overheated through excessive fermentation.

CARROTS.—Roots which have grown to their full size should be lifted and stored forthwith. Store them in a cool, dry shed, in dry sand. Carrots raised from seed sown in June or July are still growing freely, and may be left in the ground while the weather is favourable. Late sowings of Carrots are made at Frogmore each season, and these are left in the ground throughout the winter, a small quantity of litter being spread over them in times of severe frosts.

ONIONS.—Bulbs in the store should be examined carefully, and all which are not quite sound removed for immediate use. Take advantage of dry weather to clear the garden of all weeds and to wheel or cart manure to the various plots which require trenching.

APPOINTMENTS FOR NOVEMBER.

TUESDAY, NOVEMBER 2—
Scottish Hort. Soc. meet. Southampton Hort. Soc. Autumn Show (2 days).
WEDNESDAY, NOVEMBER 3—
Nat. Chrys. Soc. Floral Com. meet. Finchley Chrys. Soc. Show (2 days).
THURSDAY, NOVEMBER 4—
Manchester and N. of Eng. Orchid Soc. meet.
FRIDAY, NOVEMBER 5—
Windsor and Eton Chrys. Soc. Show.
MONDAY, NOVEMBER 8—
United Hort. Ben. and Prov. Soc. Com. meet.
TUESDAY, NOVEMBER 9—
Roy. Hort. Soc. Com. meet. (Lecture at 3 p.m. on "Useful Books for an Amateur Gardener's Library," by Mr. A. E. Bowles). Gloucestershire Root, Fruit and Grain Soc. Show, at the Shirehall, Gloucester.
THURSDAY, NOVEMBER 11—
National Chrys. Soc. Exhibition, at R.H.S. Hall, Westminster (2 days). B.G.A. (Watford Branch) meet.
FRIDAY, NOVEMBER 12—
Bradford and Dist. Hort. Chrys. Show (2 days).
SATURDAY, NOVEMBER 13—
Burnley and Dist. Hort. Soc. Chrys. Show.
MONDAY, NOVEMBER 15—
Nat. Chrys. Soc. Executive and Floral Coms. meet.
THURSDAY, NOVEMBER 18—
Manchester and N. of Eng. Orchid Soc. meet.
FRIDAY, NOVEMBER 19—
B.G.A. (South London Branch) meet. Scottish Hort. Assn. Chrys. Ex. Waverley Market, Edinburgh.
SATURDAY, NOVEMBER 20—
Morley and Dist. Paxton Soc. Chrys. Show.
TUESDAY, NOVEMBER 23—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Leaf Vegetables and How to Cook Them," by Mr. C. Herman Senn).
MONDAY, NOVEMBER 29—
Nat. Chrys. Soc. Floral Com. meet.

AVERAGE MEAN TEMPERATURE at Greenwich, 46.5.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, October 28 (10 a.m.): Bar. 29.5. Temp. 51°. Weather—Raining.

SALES FOR THE ENSUING WEEK

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, London, at 10.30.
Nursery Stock, at Guildford Hardy Plant Nursery, Artington, Guildford, by Protheroe and Morris, at 12.
MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Perennials, Bulbs, &c., at Stevens's Rooms, 38, King Street, Covent Garden.
WEDNESDAY—
Trade sale of Bulbs at 1, Japanese Lilies at 3, Azaleas, Palms, &c., at 4, by Protheroe and Morris, 67 and 68, Cheapside.
16th annual sale of Nursery Stock at Shortlands Nursery, Shortlands, by order of Mr. J. B. Bryant, by Protheroe and Morris, at 11 o'clock.
THURSDAY—
Roses, at Protheroe and Morris's Rooms, at 1.
FRIDAY—
Nursery Stock, at the Nurseries, Hawkenbury, Tunbridge Wells, by Protheroe and Morris, at 12.

Bacterised Peat.

This journal was, we believe, the first to call attention to the extremely interesting and promising experiments made by Professor Bottomley in the production of a novel kind of plant-food.

That plant-food, known as bacterised peat, is prepared by treating certain kinds of peat with certain bacteria. After this process, as a result of which the amount of soluble humates is largely increased, the bacteria are put out of action by heat, and to the treated peat is added another kind of bacterium, an azotobacter, which brings about a fixation of nitrogen. Preliminary experiments with this bacterised peat have given remarkable results. By the addition of small quantities to the soil the growth and yield of plants have been shown in many cases to be very greatly increased. In the earlier stages of his experiments Professor Bottomley attributed these effects to the large quantities of soluble nitrogen compounds contained in the bacterised peat.

The general appearance of the plants so treated suggested, however, that their luxuriant and sturdy growth was due to something more than liberal supplies of nitrogen compounds.

Now, recent discoveries of physiologists have shown that animals require not only the ordinary foods, but also minute quantities of other, till recently unknown, substances, to which the name of accessory food substances has been given. As a result of his further researches, Professor Bottomley claims that bacterised peat contains such accessory food substances. Whence it would follow that plants not only require supplies of ordinary substance-building foodstuffs—water, carbon dioxide, compounds of nitrogen, potash, phosphorus, lime, and the like—but also need for their proper development a supply of accessory food substances.

The idea is not only novel and attractive, but also in the highest degree important. Because of its novelty and attractiveness, it deserves to be received with ready sympathy by all who are concerned with the cultivation of plants. Because of its importance, it requires to be substantiated by irrefutable evidence before it is adopted.

It is clear that two issues are involved, which may for convenience be treated separately.

In the first place we may ask, Is bacterised peat a good manure? that is, one which, the factor of price being taken into consideration, will give results better than, or at least as good as, those to be obtained by the ordinary organic and inorganic manures? Now, although it is true that, as we ourselves have seen, bacterised peat does, indeed, produce very striking results, it is, nevertheless, premature to pronounce a final judgment on this point. Experiments carried out with pot plants, by such a skilful cultivator and keen observer as Mr. Watson, the Curator of Kew Gardens, as well as those undertaken by others, are emphatically in favour of the value of Professor Bottomley's bacterised peat; but yet other experiments carried out on plants in open ground and conducted with no less care during the past two years have not yielded such encouraging results. We cannot at present give details of these latter experiments, because their author has not yet published them. Nor do we mention them with the object of suggesting that bacterised peat does not possess the virtues that are claimed for it. The evidence, in our opinion, so far as it goes at present, is strongly indicative that Professor Bottomley may have discovered a manure of the highest value. Yet, in the face of the negative results which have been obtained, it behoves us to withhold a final judgment. Meanwhile, every encouragement should be given to Professor Bottomley to continue his experiments, and to carry out trials on an extensive scale.

The second issue involved is of even greater importance, and concerns the claim that plants, like animals, require for their proper development a supply of

accessory food bodies. The argument from analogy may be urged in support of this hypothesis, and not a few facts which might seem to count against it may perhaps be met. For example, as is well known, it is possible to germinate a seed and cause it to grow into a perfect plant by supplying it only with water, air, and mineral salts. That this may be done, even with plants the seeds of which are very small, is not, perhaps, a fatal objection to the professor's theory. For it is open to him to maintain that the plants would have grown quicker and better if they had been supplied with the accessory food bodies. It is known that animals require but very small quantities of these substances, and it might be urged that the seeds of plants contain in their endosperm, or already in the embryo, the necessary minimal quantity of accessory food substances.

Suffice it to say that this issue is in like case with the practical aspect; namely, that the evidence is very suggestive that plants, like animals, require accessory food substances. At present, however, we do not think that the evidence is so overwhelmingly strong as it must be before the theory of accessory plant-food substances may be accepted as finally established.

We believe that Professor Bottomley has offered to put his discovery at the disposal of the State for the period of the war. It is a generous offer, and we think that the State should accept it, and that it should at once appoint a small commission of experts, including several practical growers, a botanist, a chemist, and a bacteriologist, to conduct a series of rigorous tests with respect to the manufacture and uses of bacterised peat. The preliminary work of such a commission need not delay the application of this new manure on a wide scale during the coming year, and it should be of the greatest use in settling authoritatively the value of what may turn out to be an epoch-making discovery.

It would be a great pity if the claims set up by Professor Bottomley, as the result of his long and patient labours, were, instead of being subject to rigid critical examination, left to take their chances among the credulous—always ready to believe in the virtues of some new thing—and the hypercritical, always prepared to show in advance that the new thing is naught. Enquiry into the kind of peat used as the raw material, the several stages of manufacture, analyses of the contents of the finished article and large-scale comparative trials of the effects of the new manure should serve in a few months to determine the true value of bacterised peat.

FRUITS OF MAGNOLIA PARVIFLORA.—The fruiting shoots of *Magnolia parviflora*, from which the illustration in fig. 95 was prepared, were sent by Mr. WILLIAM F. ROWLES, Ellisfield Manor Gardens, Basingstoke, on September 23 last. Mr. ROWLES informs us that this is the first occasion on which the tree has fruited at Ellisfield Manor, and that it is bearing freely, making a beautiful object in the garden. It is growing in a small bed facing east, with a background of shrubs on the west. At first the cap-

sules are cream-coloured, but as the season advances they develop a beautiful bright pink colour, and are then most attractive objects. *M. parviflora* is a native of the alpine region of the Japanese island of Nippon. It forms a small tree with handsome oblong or obovate-oblong leaves some 6 inches long. The flowers are creamy-white with numerous blood-red stamens.

R.H.S. APPOINTMENTS FOR 1916.—The following dates have been fixed by the Royal Horticultural Society for its shows and meetings in 1916:—January 11, 25; February 8, 22; March 7, 14, 15, 23; April 11, 14, 18, 19; May 2, 16, 23, 24, 25; June 6, 20; July 4, 5, 6, 11, 18; August 1, 15, 29; September 12, 19, 26; October 3, 4, 10, 24; November 7, 21; December 5, 19. The Chelsea Show will be held on May 23, 24 and 25, and Holland House Show on July 4, 5 and 6.

NATIONAL CHRYSANTHEMUM SOCIETY'S LECTURES.—The lectures which were to have been delivered before the members of this society on November 3 and December 8 by Dr. KEEBLE and Mr. P. A. CRAGG, respectively, have been postponed in consequence of the new lighting regulations. The Committee hopes that in the near future arrangements may be made to carry out this part of the Society's programme.

HELP FOR THE RED CROSS FUND.—Mr. F. DUCANE GODMAN, South Lodge, Horsham, has issued a list of Orchids from his collection, to be sold for the benefit of the Red Cross Fund. The list includes a popular selection at very low prices, and the plants may be seen at the gardens. Communications on the subject should be addressed to Mr. SAVEGAR, the gardener.

MR. JAMES HUDSON.—The many friends of Mr. JAMES HUDSON, who has for many years past had charge of Mr. LEOPOLD DE ROTH-SCHILD's gardens at Gunnersbury House, Acton, will learn with deep regret of the death of his wife, which occurred after a month's illness on the 21st inst. Mr. and Mrs. HUDSON had been married for forty-five years. The funeral took place on Monday last, the 25th inst.

LECTURES ON PLANTS AND THEIR DISEASES.—The University of Manchester is giving a course of lectures on "Plants in Health and Disease," by Professor F. E. WEISS, assisted by Dr. A. D. IMMS, lecturer in agricultural entomology, and by Mr. WILFRED ROBINSON, lecturer in agricultural botany. The lectures are held at the University on Friday evenings at 7.30 p.m., and the opening discourse was given on Friday, October 15, when the attendance numbered more than 400, the majority of those present being allotment holders. Admission is free. The lecturers will deal with the main facts of plant life, including both the nutrition and the propagation of plants. In the latter part of the course an account will be given of some of the more common diseases met with in plants cultivated in gardens and allotments, with the cause and the treatment of the diseases.

TRIALS AT WISLEY.—The Council of the Royal Horticultural Society has arranged to carry out the following trials next year in the Wisley Gardens:—Flowers: "Annual" Carnations, Indian Pinks, Clarkias, Delphiniums, Larkspurs, Godetias, Mossy Saxifrages and Annual Sunflowers. Vegetables: Celeriac, Celery, Mid-season Peas, Potatoes and Savoys. Sundries: Powder sprayers and fungicides. To prepare for the trials in 1917, 1918 and 1919, some of the seeds and plants are required sufficiently in advance to become established by the time appointed for their consideration by the judges, namely:—To be sent 1916: Hollyhocks, Onions, autumn-fruiting Raspberries, for judging in 1917. To be sent 1916, summer-fruiting Raspberries, for judging in 1918. To be sent 1916, biennial and winter-flowering Stocks, for judging in 1917. The carrying out of the above trials will depend largely on the supply of labour available. The trial of

Tomatoes under glass, arranged for 1916, has been deferred until 1917.

WAR ITEMS.—Private WILLIAM S. CROZIER, of the King's Own Scottish Borderers, has been killed in action in France. Previous to the war the late Private Crozier was a member of the garden staff at Hartrigge, Jedburgh, the estate of Lord STRATHEDEN AND CAMPBELL.

—Private EDWARD GIBSON, of the Argyll and Sutherland Highlanders, has been killed in France. Prior to the outbreak of war he was employed in Strowan House Gardens, Perthshire.

—Private JAMES CRICHTON, 8th Gordons, has been killed in action in France. He was 20 years of age, and before the outbreak of war was an apprentice gardener at Ardlar, Scotland.

—Mr. A. ROBERTSON, gardener, West Ferry,

—Private JOHN ANDERSON RODGER, 10th Cameron Highlanders, has been killed in action in France. He was a gardener, and a native of Selkirk.

—Private B. BRAY, who joined the 7th Norfolk with five other members of the garden staff at Heacham Hall, Norfolk, in August, 1914, has been killed in France.

—Lance-Corporal JOHN STEWART, 5th (Lochiel's) Cameron Highlanders, has been reported missing since September 25. Previous to joining the Army he was engaged in the Royal Botanic Gardens, Edinburgh.

—Private HERBERT WELLS, 6th Royal West Kent Regiment, has been killed in France. Prior to joining the Army he was journeyman in the



FIG. 95.—FRUITS OF *MAGNOLIA PARVIFLORA*.
(See p. 276.)

[Photograph by E. J. Wallis.]

Dundee, who is serving with the Black Watch, has received news of the death of his son, Mr. A. ROBERTSON, jun., 2nd Scots Guards, from wounds received in action.

—Private JOHN HOSSACK, 4th Camerons (Nairnshire Territorials), who has been killed in action in France, was the youngest son of Mr. JOHN HOSSACK, forester on the Cawdor estate.

—Corporal ANDREW RENNIE, Gordon Highlanders, has been wounded in France. Previous to the war he was gardener to Mr. CURRIE, Castleleven, Gourock.

—Private T. TEMPLETON, Cameron Highlanders, recently wounded in France, was a member of the garden staff at Kenmure Castle, Kirkcudbrightshire.

gardens at Holwood Park, Hayes, Kent, the residence of the Dowager Countess of DERRY.

TRANSIT OF APPLES AND PEARS BY RAIL.—The Board of Agriculture and Fisheries informs us that owing to the necessary demands of the military authorities on the railway companies serving some of the fruit-growing districts, it may be found that it would be contrary to the public interest that they should accept for transport the whole of the crop of Apples and Pears as picked. It may therefore be necessary for growers to store some part of their crop. Notes on the storage of fruit are included in the Board's Special Leaflet No. 6, which may be obtained on application at their offices at Whitehall Place, London, S.W.

ANEMONE DEMISSA.

THIS perennial species (see fig. 96) is a native of Western Yunnan, China, where it was found by Mr. G. Forrest when collecting for Messrs. Bees, Ltd., in 1906. The plants were found growing in boggy, rocky, mountain meadows on the eastern flank of the Tali range, at an elevation of over 11,000 feet. The species is closely allied to the well-known *A. polyantha* from the Himalayas, but is dwarfier in habit, and the inflorescence has fewer flowers. *A. demissa* is also found in the Eastern Himalayas. The deeply-lobed leaves and stems are thickly covered with silky hairs, the foliage being produced in rosettes and mostly prostrate. The stems grow from 8 inches to 12 inches high, and bear three or more flowers in an umbel. The flowers have long pedicels, and about 1½ inch in diameter, white inside, and flushed with violet on the outside.

A. demissa is quite hardy and grows freely in moist, partially shaded situations. The flowering season is September, so that the plant is a welcome addition to the small number of autumn-flowering species suitable for the rock garden.

The blue-flowered Himalayan *A. obtusiloba*, of similar habit to the above, and also rare, was recently in flower in the Royal Botanic Gardens, Kew. *W. Irving.*

ERRATUM.

ROTTLEA FORRESTII.—We regret that the illustration of *Anemone demissa* (fig. 88) in last week's issue appeared over the legend "*Rottlera Forrestii*." On p. 279 (fig. 97) in the present issue will be found an illustration of *Rottlera Forrestii*, of which a description was published last week.

HOME CORRESPONDENCE.

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

HUMOGEN.—Professor Bottomley's bacterised peat, now called Humogen, is receiving a good deal of attention in the newspapers, daily and other. In some of the notices statements have been made which are likely to raise doubt in the professional mind as to the genuineness of this preparation, whether faking practices are being resorted to, not by the Professor, but by others evidently anxious to make Humogen hum. There is no need for this. Humogen, as I know it, is an excellent fertiliser. I have seen it carefully tested on a variety of plants with convincing results. I know, too, that others, men of experience as cultivators, have also tried Humogen with results that were negative. The experiments at Kew Gardens were, with few exceptions, with plants grown in pots, and therefore under control with respect to water, light, and other conditions which affect the growth and health of plants. It is probable that experiments in the open are liable to be adversely affected by weather, etc. The soil, drainage, position, or the state of the plants themselves may possibly be unfavourable. Food, however wholesome it may be, cannot benefit either plants or animals if other equally important factors are neglected. The pressman who stated that Humogen would enable people to grow Potatoes and other vegetables in ordinary living rooms all the year round had food on the brain, and any cultivator who, by applying Humogen, expected to get good crops from soil altogether out of condition would be disappointed. I have not seen a single case of failure where the plants treated with Humogen have had ordinary attention. I confess to being puzzled by what Humogen does. The peat, before it is treated, even if all the acid were removed from it, would not be of any particular value as a fertiliser. The peat used by gardeners for peat-loving plants is not rich in plant food, no richer certainly, when judged by results, than good leaf-mould. An experiment in which good peat was mixed with other soil in the same proportion as that containing Humogen proves this: the peat making no difference in the growth of the plants. For this reason Humogen cannot be

classed with manures, natural or artificial. All the good must come from the action of the bacteria with which the prepared peat is inoculated. They must operate on the food contained in the soil to which Humogen is added, and they evidently continue to operate for an indefinite time, for the plants flourish until their roots are pot-bound. I am inclined to believe that excess of soil moisture is most detrimental to the action of Humogen, or rather to the bacteria, not because water is destructive to them, but what we call stagnation must be. We have to bear in mind that these micro-organisms are alive, and that to enable them to do their work they must have suitable conditions. In a properly constituted soil Humogen is capable of working a change in its productivity which after a long experience with plants, soils and plant foods I am in a position to say is very extraordinary. I have never seen anything to equal it. *W. W.*

AN AUTUMN-FLOWERING CHERRY (see p. 244).—During the early spring of 1913 I received grafts of this tree, but they were not in a suitable condition when grafting operations commenced. However, a few of them made

"After a score of years of vain endeavour to distinguish several species of *Cupressus* on the mountains of Mexico it is gratifying to learn that you think it possible that there exists only one variable species there." Specimens of six seedlings, raised from the seed of a single tree, some of which were bearing cones that were sent to me lately, differ remarkably in foliage and cones. The tree in the nursery at Pallanza, labelled "*Cupressus* sp. Hills of India," is undoubtedly *C. lusitanica*. It bore cones and was 50 feet high in 1909. Small plants at Pallanza, named "*Cupressus*, species from Kumaon," are very glaucous, and are in all probability seedlings of *C. lusitanica*. These have been sent to me from one garden under the erroneous name of *C. cashmeriana*. Seedlings raised from seed sent out in 1909 as *C. thurifera* (Mexico) by the Dendrological Society of France differ in no respect from *C. lusitanica*. It is doubtful if *C. cashmeriana* has ever produced fertile seed, as the gardener on Isola Madre in Lake Maggiore, where the finest example of this tree is growing, assured me that he had tried repeatedly to raise seedlings and failed. It is no doubt easily grafted on *C. lusitanica*, and can be raised from cuttings. See *Trees of Great Britain*, V., 1150, 1162, and 1183. *A. Henry.*



[Photograph by W. Irving.]

FIG. 96.—ANEMONE DEMISSA: FLOWERS WHITE, FLUSHED WITH VIOLET.

good growth, and produced a quantity of blossom in the following December. During July buds were obtained from the few trees that were growing, and another batch of plants propagated, with which great success has been attained. During the first year of growth they made good bushy specimens from 2½ to 3½ feet in height, and have now formed thick bushes from 3 to 5 feet high. Attempts have also been made to grow this Cherry as standard trees, but so far they have not been much of a success. The shrub may be considered a valuable one for winter flowering. The growth is very free, and the flowers are produced at quite an early age. The tree is very hardy, and suffered with us no ill effect whatever from cold sufficiently severe to destroy many supposed hardy Conifers. *E. W. Stedman, Crawley.*

CYPRESSSES AT PALLANZA.—With regard to the interesting account (p. 259) of the various species of Cypress grown in north-east Derbyshire by Mr. Arkwright, attention should be drawn to the extreme variability of *Cupressus lusitanica*, not only in cultivation, but in the wild state in Mexico. Pringle wrote to me:

A HEAVY CROP OF POTATOS.—An unnamed variety of Potato, sent here for trial, has produced the remarkable crop of forty-three tons per acre, in addition to small tubers, which were not numerous. The variety was grown in an ordinary garden plot and was not afforded special attention. The tubers, moreover, were of a very even shape and not excessively large. The crop seems to me so remarkable that I write to ask if it constitutes a record. *W. H. Divers, F.M.H., Belvoir Castle Gardens, Grantham.*

FIGS AT PENRHYN CASTLE (p. 260).—I was especially interested in Mr. E. Molyneux's description of the fine Fig tree at Penrhyn Castle, inasmuch as upwards of sixty years ago I was a journeyman there, under the late Mr. John Burn, during the occupancy of the estate by the then Colonel Penman, and I have a vivid recollection of the flourishing Fig trees there. It would be interesting to learn if the trees there now under the supervision of my old friend, Mr. Walter Speed, cousin to the late Mr. Speed of Chatsworth, Derbyshire, are the same as in my time. I may remark that

only once have I revisited Penrhyn Castle, when on a visit to Ireland, some forty years ago—the first time I met Mr. W. Speed. *William Gardiner, Horsham, Sussex.*

DAHLIAS AND FROST (see p. 260).—The explanation of some Dahlias only a little distance apart being frost-bitten and some escaping injury is not as simple as *Norice* seems to assume. Here Dahlias in a lengthened line extending to about 130 yards have been at one end killed to the ground, and for 40 yards of the other end they are unscathed. I might regard the protection of a large building as having been the means of saving that part, but in another border in which clumps of a few varieties were associated here and there with other flowers some were blackened and others untouched. In the kitchen garden some which were protected from the same direction as those which escaped in the flower garden were rendered unsightly, and others in another part fully exposed are still as flourishing as they were in summer. It is not unusual to see Potatoes in early summer affected by frost in sections, and in the last severe winter experienced here all the specimens of *Benthamias* were killed with one exception, and all were growing not far apart. Of three *Olearia macrodonta* in a border growing in exactly similar conditions only one escaped with slight damage. A plant of *O. Haastii* in the same border was killed to the ground level, and in another portion of the grounds considerably exposed another plant of this species was not touched. The same frost almost destroyed two large Bay Laurels and merely affected the tips of the shoots of another tree which grows midway between the first two, and I have noticed in similar circumstances large specimens of *Arbutus Unedo* to be affected by severe frost in exactly the same way. Frost varies in intensity in spots not far distant from each other; protection from the direction in which the air is moving during a frost has an ameliorating influence, and exposure to the sun before the frost has been dispersed or dissipated has a decidedly bad effect on vegetation. A plant growing in dry soil is less susceptible to damage by frost than one growing in wet ground, and for that reason if *Norice* wishes to have very late Peas he should see to this being a point in the management. But none of these facts explains why, as so frequently happens, plants are affected as if it were by waves of cold striking certain spots and missing others in close proximity. *B.*

WOMEN GARDENERS (see pp. 219, 252, 267).—In reply to your correspondent, W. W. (p. 252), Shall women be allowed to fill the gaps in the gardeners' ranks caused by Lord Kitchener's call for men? I for one emphatically state that there are still men eligible for the Army employed as gardeners in various establishments. In one place in particular no inducement of any kind has been offered them by their employers to do their duty to their King and country. I do not agree with W. W.'s statement that the older men were soon used up and that women have come forward to fill the gap. I for one have made over fifty applications for vacancies as head gardener; the number of replies I have had is three, and they were to say the advertisers were suited. I have been discharged from the Army after seven months' service, so I am not eligible for military service. *E.*

I agree with Mr. Martin that women will find it very difficult to obtain (and keep) situations as head gardeners even after twelve or fifteen years' experience. Like him, I appreciate their efforts to do their best in these abnormal times. Writing as one who has a woman undergardener who has undergone a course of training at one of the best known horticultural colleges, the following details may be of interest. Whereas one would expect a woman to be especially tidy and neat in her work I found her the reverse. After her college training I expected nomenclature to be a strong point; but here again I am disappointed. Her work of staking and tying is not accomplished very neatly, and she is extremely slow. With regard to intelligence and willing-

ness, nothing more can be desired. Briefly, I should much prefer a bright, intelligent lad (of about seventeen with two years' experience in a good garden. *Head Gardener.*

To offer any kind of criticism just now in reference to the above question requires delicacy, when we consider the excellence of the motive which prompts many women to enter the ranks of gardeners. Nevertheless *S. J. Martin* appears to me to be perfectly justified in many of his contentions. Lady gardeners must be prepared to do all the work that falls to the lot of the man, since they expect the same wage; and certainly if a lady gardener takes the rough with the smooth, I for one see no reason why she should not get the same wage. But she must also understand that the whole science of gardening is not to be learnt, say, in the time which has elapsed since the war began. It has taken some of us many years to learn the little we know. I admit some of us are dense, but to attain to proficiency in garden-

struct our gardens, and many of the inconveniences which are now so apparent will be swept away. But these reforms cannot be undertaken now at a time when strict economy is absolutely essential. *A. Cranstone, Watlington, Oxon.*

SIR JOHN HILL (see p. 241).—To Mr. Brotherton's sketch of the remarkable career of Sir John Hill I may add that it is on record that Hill was appointed head gardener at Kensington Palace on the accession of George III. in 1760—"a post which brought him in £2,000 per annum." Hill has been styled the first superintendent of the Royal Gardens, Kew, but his position there seems to have been of an honorary character, although he was author of a *Hortus Kewensis*. From Wroth's *The London Pleasure Gardens of the Eighteenth Century* it appears that on May 6, 1752, "Dr. John Hill was caned in the Rotunda, Ranelagh Gardens, by an angry Gentleman," with a pictorial representation of the event. Three years after the death of her husband, Lady Hill published



[Photograph by W. Irving.]

FIG. 97.—ROTTLERIA FORRESTII: FLOWERS PALE YELLOW.

ing requires a longer training than one year. I myself at one time sought the help of the ladies, but I found myself in a somewhat difficult position. I had such questions put to me as, "Would the lady of the house allow the maids to come and do the domestic duties, or could I provide anyone else to do them, as if they were working all day they would have no time?" But the male gardener has frequently to do the same thing. I admit it is difficult for the woman gardener, since she is not used to this sort of life; but the same wage is expected, and therefore we must expect the same return. Lady gardeners would do well to enter the profession with the determination that becomes either man or woman who means to succeed. They must be prepared to take the dirty with the clean, the rough with the smooth. Gardening includes many kinds of work, and not all can be done with gloved hands. Although the work is undertaken in many cases from a patriotic motive, it should be done with the same will as the domestic duties that are natural to a woman. I believe that if the employment of women gardeners becomes general, and they enter the profession with a proper interest in the work, we shall be able to recon-

a pamphlet entitled *Address to the Public concerning Sir John Hill and the Earl of Bute*, in which she asserts that Hill was ruined financially by the publication of costly illustrated botanical books, notably *The Vegetable System*, and that Lord Bute persistently urged Hill to continue, and promised that in the end he would be no loser thereby. *The Dictionary of National Biography*, vol. XXXI, gives the titles of seventy-six separate publications, with an additional list of works of doubtful authorship attributed to Hill. Garrick lampooned Hill's work in the following lines:

For physics and farces, his equal there scarce is.

His farces are physic, his physic a farce is. Disraeli (*Curiosities of Literature*) gives an instance of Hill's literary knaveries. Hill made an arrangement with a bookseller to translate Swammerdam's work on insects for fifty guineas. He then recollected that he did not understand a single word of the Dutch language. Accordingly he bargained with another translator for twenty-five guineas. The second man was equally ignorant of Dutch, and rebargained with a third, who perfectly understood the original, for twelve guineas. "So," continues

Disraeli, "the translators who could not translate feasted on venison and turtle, while the modest drudge whose name never appeared to the world broke in patience his daily bread." W. B. H.

PILLAR ROSE SANDERS' WHITE RAMBLER.—I agree with Mr. Geo. Taylor's remarks (see p. 266) as to the merits of Sanders' White Rambler. We have it here, growing in proximity to White Dorothy, Mrs. Littleton Dewhurst, Sweetheart, Lady Blanche, Mrs. M. H. Walsh, and Pemberton's White Rambler, and there can be no question as to its superiority over these varieties. The blooms are borne in fine clusters, and the foliage is of the true glistening Wichuraiana character. A. J. Cobb.

WILLOW FOR CRICKET BATS (see p. 244).—The White Willow, *Salix alba*, is practically of no value except for firewood and hurdle-making, and has never been used for making cricket bats. The Willow Mr. Webster should have referred to in your last issue is *Salix coerulea*, the true cricket-bat Willow, which is the most profitable tree to plant, provided that the soil and locality are suitable. I have had many years' experience in planting and selling this Willow, and do not agree with Mr. Webster that "quite at an early age, say 30 to 50 years, it is at its prime for turning out the best class of cricket bats"; nor that "the average price paid for the best quality of wood is fully 4s. per cubic foot." I have sold many trees 12 to 14 years old at £5 each, averaging 14 to 15 inches in diameter, which worked out at 15s. to 18s. per cubic foot. This Willow is fully described in *Trees of Great Britain and Ireland*, Vol. VII., p. 1,763. H. Clinton Baker.

—Two well-known makers of cricket bats inform me that, taking the average for several years, the price paid by them for Willow timber would work out at between 4s. and 5s. per cubic foot. "Clefs" are usually bought at from 1s. 8d. to 2s. each, and as fully 2½ go to the cubic foot, the price of these is similar to wood in the round. Both firms, however, when buying Willow timber usually do so at an arranged price per tree, and rarely purchase by the cubic foot, the price depending entirely on the quality and cleanness of the wood. Although the above is the average value per cubic foot, yet much higher prices have occasionally been paid for particularly clean trees in which there would be little or no waste of timber when manufacturing the bats. The timber of the White Willow (*Salix alba*) or a variety, called by the practical bat-maker "close barked," is preferred, and specimens from a tree that fetched £15 were so recognised at Kew. Incidentally it may be mentioned that the bat-making industry has been hard hit by the war, not a dozen bats being now sold where formerly a thousand were purchased, and this fact has considerably affected the price of Willow timber. A. D. W.

HOME-GROWN BULBS.—An exhibition of British-grown bulbs in the R.H.S. Hall, Vincent Square, late in July or early in August, 1916, would be a great aid to British trade. The public ought to be shown that as good bulbs of Tulips, Daffodils, and various other plants can be grown at home as elsewhere. I have reason to believe that the "powers that be" will give a favourable reception to the idea if they are assured that the growers will support such a show by sending exhibits. May I ask for the opinions of your readers? Joseph Jacob, Whitchurch, Salop.

LATE PEAS (see pp. 203, 252).—The supply of late Peas depends very much on climatic conditions. I remember some years ago, when the autumn was unusually mild, that we had Roses and Pelargoniums at Christmas. At that time I had charge of a garden in which there was a row of late Peas, and, being anxious to know the latest date on which Peas could be gathered, I allowed them to remain ungathered until December 24. A change in the weather then seemed imminent, and they were picked on that day. The Peas were rather hard, but it is unusual to have fresh Peas for Christmas dinner. T. Smith, Newry.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 26.—The usual fortnightly meeting was held on Tuesday last in the Vincent Square Hall, Westminster. The exhibition was a small one, but equal to the average of these shows in autumn. Chrysanthemums and Dahlias were the principal features in the floral section. The Floral Committee recommended one First-class Certificate and five Awards of Merit, four of the latter for varieties of Chrysanthemums.

The Orchid Committee recommended one First-class Certificate and one Award of Merit to novelties, whilst the awards of Medals for collections of Orchids numbered six.

The Fruit and Vegetable Committee made no award to a novelty, but several fine collections of fruits were staged, and to these were awarded two Silver-gilt Hogg Memorial Medals and two Silver-gilt Knightian Medals.

At the three o'clock meeting in the Lecture Room, the superintendent, Mr. S. T. WRIGHT, delivered an address on "The Society's Gardens."

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. C. T. Drury, G. Reuthe, Chas. E. Shea, J. T. Bennett-Poë, F. Page Roberts, C. Dixon, John Dickson, H. J. Jones, W. Bain, R. C. Reginald Nevill, C. R. Fielder, W. Howe, J. F. McLeod, T. Stevenson, John Jennings, J. W. Moorman, R. W. Wallace, John Green, E. A. Bowles, W. J. Bean, W. P. Thomson, Chas. E. Pearson, E. H. Jenkins and Geo. Paul.

AWARDS.

FIRST-CLASS CERTIFICATE.

Scolopendrium vulgare crispum speciosum (see fig. 98).—A superbly crested form of the common Hartstongue Fern, the fronds being crested almost to the mid-rib by pleatings, themselves waved at the margins. Each pleat is arched, forming a beautiful frilled margin, very regular, like a goffered ruffle. The plant was a magnificent specimen, with 62 fronds. Shown by Mr. W. B. CRANFIELD.

AWARDS OF MERIT.

Carnation 'Aviator'.—A medium-sized bloom of scarlet colour. Shown by Messrs. W. WELLS AND CO.

Chrysanthemum Charlotte E. Soer.—An exhibition Japanese variety of rich, clear yellow; the older florets at the base have purplish-rose markings. Shown by Mr. MARTIN SILSBURY, Shanklin.

C. Bertha Fairs.—A beautiful single Chrysanthemum of the Mensa type. The colour is rosy terra-cotta, passing to gold at the centre.

C. Market Bronze.—A medium-sized, reflexed Japanese variety; the gold-coloured base is heavily suffused with bronze. These two were shown by Mr. NORMAN DAVIS.

C. General Smith - Dorrien.—A Japanese variety of large size. The colour is rosy-chestnut with golden reverse. A broad, big bloom of the best exhibition type. Shown by Messrs. W. WELLS AND CO.

GROUPS.

The following Medals were awarded for collections:—

Silver-gilt Banksian Medal to Messrs. H. J. JONES, LTD., Ryecroft Nursery, Hither Green, Lewisham, for Chrysanthemums and border Asters (Michaelmas Daisies). This was a well-arranged exhibit and the two kinds of flowers blended well, the exhibitor cleverly choosing varieties that harmonised. Greatest interest was centred in the large Japanese Chrysanthemums, of which the more notable were Mrs. Kinsey, white; Moneymaker, a medium-sized white variety, very popular with florists; Bob Pulling, a beautiful yellow variety of the best exhibition type; Mrs. Tickle, pink; Miss Bennett, amaranth; and Cranford Yellow. One of the prettiest vases was filled with the charming pink Pompon Elise Dorden, an old variety, but still one of the best of this type.

Silver Flora Medals to Mr. L. R. RUSSELL, Richmond, for a table of berried shrubs, climbers and ornamental trees and shrubs. Messrs. R. WALLACE AND CO., Kilnfield Nursery, Colchester, for a floor group of shrubs and Conifers. Many species of Berberis were shown

in this exhibit, including the recently-introduced *B. brevipaniculata*, *B. Wilsonae* and *B. subcaulalata*. Other subjects of interest were *Lonicera nitida*, *Ilex Peryii*, *Stranvaesia undulata* (with bunches of red berries) and *Cotoneaster frigida montana* (with panicles of scarlet berries that are said to hang longer than those of the type). The Conifers included healthy specimens of *Pinus Strobus nana*, *Juniperus virginiana aurea* and *Juniperus Knapp Hill* variety. Mr. NORMAN DAVIS, Framfield, Uckfield, Sussex, for Chrysanthemums. This was a small, but very select, collection, the blooms being of splendid quality. At the back were vases of singles of the Mensa type; the newest, of rosy terra-cotta colour, named Bertha Fairs, received an Award of Merit. The others were Mensa, white; Mrs. Loo Thompson, primrose yellow; and Glorious, deep yellow. A selection of the large Japanese blooms includes Mrs. Gilbert Drahble, white; Amy Fulton, delicate flesh-pink, an unusual shade in Chrysanthemums; Mona Davis, rose-pink; Chas. Davis, orange-bronze; His Majesty, the finest crimson variety; and Mrs. H. Tysoe, a sport from W. Turner, with lemon-coloured florets. And Messrs. CARTER PAGE AND CO., London Wall, for a general collection of Dahlias, the best group of these flowers in the hall.

Silver Banksian Medals to Messrs. J. CHEAL AND SONS, Crawley, for berries and autumn-tinted foliage. A mass of red Oaks in the centre arrested attention, the finest being *Quercus coccinea* and *Q. palustris*. Sprays of *Acer tataricum* Ginnala were superbly tinted, the colours ranging from yellow through shades of rose and red to crimson. *Rhus japonica* Osbeckii was also a superb colour—glowing red, approaching scarlet. Messrs. STUART LOW AND CO., Bush Hill Park, Enfield, for Perpetual-flowering Carnations and Winter-flowering Begonias. The Begonias were excellent specimens, each having a profusion of fine flower trusses. The hardest variety is the salmon-coloured Optima that does well in an ordinary greenhouse. Scarlet Beauty; Mrs. Heal, rose; Elatior, deep rose; and Emita, orange-scarlet, were all finely displayed. Messrs. H. B. MAY AND SONS, Edmonton, for hardy Ferns and capital little specimens of the Gloire de Lorraine type of Begonias. The Ferns were chiefly plumose and crested forms of *Scolopendrium vulgare* and *Polypodium cambricum*; two of the choicest were P. c. Borrowi and P. c. Prestonii; the latter has the taller and more plumose fronds. Messrs. W. WELLS AND CO., LTD., Merstham, for Chrysanthemums. They showed fine Japanese varieties in Kara Dow, pale bronze, with golden reverse; Wm. Rigley, yellow; Daily Mail, yellow; Queen Mary, white; Mrs. R. Lufford, chestnut-red; and Almirante, an early-flowering border variety of dark bronze colour. And Mr. J. B. RIDING, Chingford, for Dahlias.

Bronze Flora Medals to Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering Carnations; Messrs. W. CUTBUSH AND SON, Highgate, for *Dracaena superba*, with narrow, rosy-tinted foliage; *Hydrangeas*, *Coleus Cordelia*, and *Ericas*, Messrs. J. PIPER AND SON, Bayswater, for climbers, berried shrubs and ornamental arborescent species; Mr. G. REUTHE, Keston, Kent, for hardy flowers and Nerines. And Messrs. GODFREY AND SON, Exmouth, for Chrysanthemums.

'Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; Messrs. Jas. O'Brien (hon. sec.), S. Low, F. J. Hanbury, Pantia Ralli, A. McBean, Walter Cobb, J. Charlesworth, J. Cypher, H. G. Alexander, A. Dye, C. H. Curtis, S. W. Flory, W. Bolton, Gurney Wilson, Sir Harry J. Veitch and Sir Jeremiah Colman, Bart.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Lucieae Fowler's variety (*Dowiana aurea* × *Enid*), from J. GURNEY FOWLER, Esq., Brackenhurst, Pembury. A superb *Cattleya*, with the fine lip and general outline of *C. Hardyana*, but with broader wavy-edged sepals and petals of a bright rose-purple. The ample labellum is ruby-purple in front, the disc golden-yellow, a fine line of the same colour extending

from the base. The inflorescence bore four flowers. The variety is one of the finest *Cattleyas* of its class.

AWARD OF MERIT.

Cattleya Moira rubra (*Fabia* × *Mantini*), from Messrs. HASSALL AND CO., Southgate. A pretty addition to the late-flowering *Cattleyas* of the *C. Mantini* class, of which it is an improvement, the flowers retaining the same shape, but of a deeper and brighter colour. The sepals and petals are rose-purple, and the front of the lip reddish-purple.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., Brackenhurst, Pembury, staged a group of rare and finely grown Orchids, for which a Silver Flora Medal was awarded. The principal plants were two fine white forms of *Cattleya labiata*, both of which had previously received First-class Certificates. *Laelio-Cattleya Numidia* (*C. Empress Frederick* × *L.-C. Golden Oriole*), a pretty flower of a distinct bronzy-rose tint, with a richly coloured lip; two good forms of *L.-C. luminosa*, one with five grand blooms on a spike; the new *Cattleya Falco* (*Dupreana* × *Dowiana aurea*); good *C. Mantini*; *Odontoglossum crispum*; and the new *Brasso-Cattleya Pallas* (*B.-C. Digbyano-Mossiae* × *C. Warszewiczii*).

SIR JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), showed new and rare Orchids, including the unique clear-white *Dendrobium bigibbum* Lady Colman; *Cattleya Alcimeda coerulea*, white with blue-tinted lip, a colour much appreciated at Gatton, *Cattleyas* of most sections of that tint being in the collection there. The group also contained the new *Cattleya Beryl* (*Wendlandii* × *Hardyana*); *Laelio-Cattleya Lucasii* Gatton Park variety (*C. Warszewiczii* var. × *L. Iona*), with very dark labellum; and three forms of *Cattleya Drapsiana* all differing in colour.

ELIZABETH LADY LAWRENCE, Burford (Orchid-grower, Mr. Swindon), exhibited *Laelio-Cattleya Anzac* (*Clive* × *bletchleyensis*), a well-formed rose-coloured flower, with maroon-coloured lip.

PANTIA RALLI, Esq., Ashted Park, Surrey, showed *Sophro-Laelio-Cattleya Ashtedensis* (*S.-C. puneximia* × *C. Bowringiana*), an interesting cross, with much resemblance to *Cattleya Mantini*, and showing but little trace of its *Sophronitis* ancestor.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), exhibited *Brasso-Cattleya William Pitt*, a large, rose-tinted flower.

G. R. THWAITES, Esq., Chessington, Streatham (gr. Mr. Hamington), showed a good bright-red form of *Sophro-Cattleya Blackii*.

WALTER COBB, Esq., Normanhurst, Ruislip (gr. Mr. C. J. Salter), showed *Cattleya Fabia* Cobb's variety, of very dark colour.

MESSRS. CHARLESWORTH AND CO., Haywards Heath, were awarded a Silver Flora Medal for a group containing choice novelties, the best of which were the new *Laelio-Cattleya Salonica* (*L.-C. Fascinator* × *C. Warszewiczii* Frau Melanie Beyrodt), a fine, clear-white flower, with deep-purple lip and a yellow throat; and the pretty *Cattleya Basil* (*Portia* × *Enid*), which had previously been given an Award of Merit.

MESSRS. SANDER AND SONS, St. Albans, were awarded a Silver Flora Medal for an extensive group, the main feature in which was a fine batch of dark-coloured *Cattleya Fabia*, a few having pure-white sepals and petals. A good selection of *Odontoglossums* and *Cypripediums* and an interesting selection of species were also included in this exhibit.

MESSRS. STUART LOW AND CO., Jarvisbrook, Sussex, staged a pretty group with fine *Oncidium varicosum* and *Vanda coerulea* at the back. A good selection of *Laelio-Cattleyas* and *Cattleyas* were staged, amongst which, noted as special forms, were *Cattleya Peetersii perfecta* (*labiata* × *Hardyana*) and *C. Boadicea* (*Gaskelliana* × *Hardyana*). (Silver Flora Medal.)

MESSRS. HASSALL AND CO., Southgate, staged an attractive group, in which their hybrids of *Cattleya iridescens* were well displayed. A fine form of *C. Sybil* was especially good. Varieties of *Cattleya* Lord Rothschild, *C. Fabia* of various tints, including the white forms, and some *Brasso-Cattleyas* were also noticed. (Silver Flora Medal.)

MESSRS. J. AND A. McBEAN, Cooksbridge, staged a well-arranged group of showy varieties, including their deep-scarlet *Odontioda Diana* and other *Odontiodas*, *Cymbidium Schlegeli*, *C. Doris*, good *Cattleya Fabia*, and other hybrids. (Silver Flora Medal.)

MESSRS. FLORY AND BLACK, Slough, again showed forms of their *Laelio-Cattleya Soulange* (*L.-C. Lustre* × *C. Dowiana aurea*), the small plants showing perfectly shaped flowers of the



FIG. 93.—SCOLOPENDRIUM VULGARE CRISPUM SPECIOSUM.

(See Award by the Floral Committee.)

true *Cattleya* form. This firm also showed *C. Peetersii* and two good *Laelio-Cattleya luminosa*.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Messrs. W. J. Jefferies, W. Bates, Edwin Beckett, J. Udale, H. J. Wright, A. Bullock, G. Reynolds, Owen Thomas, E. A. Bunyard, J. Jaques, John Harrison, H. S. Rivers and W. Poupard.

C. A. NIX, Esq., Crawley, Sussex, was awarded a Silver-Gilt Hogg Memorial Medal for a collection of Apples and Pears of outstanding quality, and varieties of Grapes, the last including Muscat of Alexandria, Appley Towers, Muscat Hamburgh, Black Hamburgh, Lady Downes, Mrs. Pince, Lady Hastings and Gros Maroc. A selection of the Apples includes Gloria Mundi, Bramley's Seedling, Gascoyne's Scarlet Seedling, Warner's King, Bismarck and Lane's Prince Albert; whilst of Pears there were splendid fruits of *Beurré Bosc*, *Doyenné du Comice*, *Beurré Clairgeau*, *Durondeau*, Chas. Ernest, Marie Louise and others.

A Silver-Gilt Hogg Memorial Medal was also awarded to C. A. CAIN, Esq., Welwyn, Hertfordshire, for a collection of Apples and Pears of superb quality. In this fine exhibit we noticed such excellent varieties of Apples as Lane's Prince Albert, Rival, Lord Derby, Christmas Pearmain, Allington Pippin, Cox's Pomona, Wealthy and Lord Derby; and Pears Conférence, *Beurré Bosc*, *Beurré Alexandra* Lucas, *Doyenné du Comice*, and Brown *Beurré*.

MESSRS. BUNYARD AND CO., LTD., Maidstone, showed Pears grouped in the countries of their origin, there being three sections, i.e., England, France and Belgium. The British varieties included a few well-known sorts, such as Conférence, St. Luke, Uvedale's St. Germain, Eyewood Bengamotte, General Wauchope, Verulam, Black Worcester and Pitmaston Duchess. France was represented by such varieties as Duchesse d'Angoulême, *Beurré Superfin*, Marie Benoist, Roosevelt, *Doyenné du Comice*, *Beurré Hardy*, Duchesse de Bordeaux, *Beurré Alexandra* Lucas, Santa Claus and Catillac. But the Belgium varieties were the best, and in this section were found *Emile d'Heyst*, *Glou Morceau*, Marie Louise, *Beurré Easter*, *Durondeau*, Marie Louise d'Uccle, *Conseiller à la Cour*, Winter Nelis, *Beurré Diel*, *Joséphine de Malines*, *Nouvelle Fulvie* and others of merit. (Silver-gilt Knightian Medal.)

MR. WILL TAYLER, Hampton, Middlesex, exhibited Apples and Pears against a background of pot Vines in fruit. Hardy fruits shown by this exhibitor are always of choice quality and remarkable for their splendid colour. Specimens of Cox's Orange Pippin were almost perfect, and had that rich yellow ground covered with dark-red that always betokens high quality. The beautiful Pine Golden Pippin was observed, also Golden Russet and fine King of the Pippins. Good culinary Apples were seen in Bramley's Seedling, Beauty of Kent, Newton Wonder and Gascoyne's Scarlet Seedling. (Silver-Gilt Knightian Medal.)

MESSRS. SUTTON AND SONS, Reading, were awarded a Silver-Gilt Knightian Medal for vegetables raised from seeds sown at the beginning of August last. The object of the exhibit was to show how quickly the food supply could be increased in autumn. The exhibit included: Cos Lettuce, Cabbage Lettuce, Endive, Carrots, Beets, Onions, Potatoes, Peas, Beans, Kohl Rabi, Spinach, various saladings and Turnips. The best dishes were those of Turnips Green Top and Early Six Weeks; Earliest White Kohl Rabi, Ringleader, Little Marvel and May Queen Peas, Carrots Scarlet Horn, Lettuce Ideal and Black Spanish Radish.

MESSRS. J. CHEAL AND SONS, Crawley, showed a small but select collection of Apples and Pears. Fruiting branches of Apple Crawley Beauty demonstrated the prolific cropping qualities of this new variety. Two fruits of Pear General Todleben weighed 2½ oz. and 2½ oz. respectively.

NATIONAL CHRYSANTHEMUM.

OCTOBER 25.—The Floral Committee of the above society at their meeting on this date considered many more novelties for award than at the previous meetings. This season seven First-Class Certificates and four Certificates of Commendation were awarded.

FIRST-CLASS CERTIFICATES.

Charlotte E. Socer.—A perfectly formed, large-flowered Japanese variety, of Lady Talbot type. The colour is canary-yellow, shaded at the ends

of the mature florets with bronze. Shown by Mr. MARTIN SILSBURY.

Sir Edward Letchworth.—A very charming large, incurved Japanese bloom of similar habit to Mrs. Gilbert Drabble. The broad florets are of deep rose colour, and the silvery reverse is freely shown. Also shown by Mr. MARTIN SILSBURY.

Bertha Fairs.—The most beautiful and distinct of the certificated varieties. It is a perfectly-formed single of Mensa type. The colour is officially described as being golden fawn with a yellow zone, but besides these shades there is an elusive sheen of ruby crimson. Shown by Mr. NORMAN DAVIS.

Phyllis Cooper.—A rich, golden yellow single variety of Mensa type. Shown by Mr. PHILIP LADDS.

Miranda.—A single of terra-cotta colour, a sport from Portia. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Norman Pearson.—A chestnut-crimson single variety, of Mensa type. Shown by Mr. G. MILEHAM.

Market Bronze.—A valuable, medium-sized Japanese variety of golden bronze colouring. Shown by Mr. NORMAN DAVIS.

CARDS OF COMMENDATION.

Champagne.—A very freely flowering Japanese of Source d'Or type. The colour is ruby-crimson, especially attractive in artificial light. Shown by Messrs. WELLS AND Co.

Mrs. Harold Phillips.—An attractive rosy-manve single of Edith Pagram type. Shown by Mr. W. J. GODFREY.

Tom Wren.—A good pure white single variety with stout ray florets of Merstham Jewel type. Shown by Mr. THOS. STEVENSON.

Master A. Ewen.—A golden bronze single of Mensa type. Shown by Mr. W. NEWTON.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 7.—*Committee present*: Rev. J. Crombleholme (in the chair), Messrs. J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, A. J. Keeling, J. Lupton, D. McLeod, L. Sander, W. Shackleton, S. Swift, H. Thorp, Z. A. Ward and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Odontoglossum Charlesworthii Marfield variety, shown by Mrs. R. LE DOUR.

Cattleya Fabin var. *Rosendale*, R. ASHWORTH, Esq.

C. Peetersii alba West Point variety (*labiata alba* and *Hardyana alba*), flowers of good form, pure white sepals and petals, with lip brilliantly marked, S. GRATIUX, Esq.

C. amabilis alba, The Knowle variety (*C. Fran M. Beyrodt* × *labiata alba*), flowers of excellent form and substance, sepals and petals pure white, lip pleasingly marked, from J. HARTLEY, Esq.

C. Peetersii Lee's variety (*Hardyana* × *labiata*), W. R. LEE, Esq.

AWARDS OF MERIT.

Cattleya Britannia variety *Melaine* (*C. Canhamiana alba* × *C. F. M. Beyrodt*); *C. Minnie de Larrinaga* (*Fobia* × *Bala*); *Odontoglossum cereum album* Marfield variety, all shown by Mrs. LE DOUR.

C. Amiel West Point variety (*Dusseldorf* × *fulvescens*); *C. Venus West Point* variety (*Iris* × *aurea*), both shown by S. GRATIUX, Esq.

Odontoglossum illustrissimum var. *Janua*, R. ASHWORTH, Esq.

Cypripedium Hildolfe (*ciliolare* × *Gowcrii* × *bioglyense*), the Rev. J. CROMBLEHOLME.

Odontoglossum J. J. Bolton (*crispum* × *amabile*), J. J. BOLTON, Esq.

Cattleya Ajax Orchidhurst variety (*Armstrong* × *aurea*), from Messrs. ARMSTRONG AND BROWN.

The following medals were awarded for collections:—

Gold Medal to W. R. LEE, Esq., Heywood (gr. Mr. C. Branch), for a group, including *Cattleyas* in variety, *Cypripediums*, and a col-

lection of *Dendrobiums* and *Phalaenopsis* *Schrödera*.

Large Silver Medal to R. ASHWORTH Esq., Newchurch (gr. Mr. W. Gilden), for a mixed group.

Silver Medals to Mrs. R. LE DOUX, West Derby (gr. Mr. J. W. Fletcher), Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton); J. J. BOLTON, Esq., Pendleton (gr. Mr. J. Law); and Messrs. SANDER AND SONS, St. Albans.

ELGIN CHRYSANTHEMUM.

OCTOBER 21.—A Chrysanthemum, fruit and vegetable show was held in the Town Hall, Elgin, on the above date. It is now many years since such an exhibition has been held in Elgin. Considerable interest was displayed, and entries were received from all over Morayshire and the North. The entries were numerous and competition exceptionally keen. The proceeds of the exhibition—which was highly successful—are to be devoted to providing comforts during the coming winter for the soldiers of the Morayshire Regiments at the front. Mr. Sutherland, M.P. for the Elgin Burghs, opened the exhibition, Mr. Ramsay, Lord Provost of Elgin, occupying the chair. The leading prize-winners were Messrs. R. MACDONALD, Elgin; JOHN COUTTS, Rosefield, Elgin; ALEXANDER DUFF, Darleston, Elgin; E. HAY, King Street, Elgin; WILLIAM OGSTON, Newton; J. A. GRIGOR, Selpark, Kinloss; A. MCCONNACHIE, Ivy Bank, Bishopmill; CHARLES G. CUMMING, Pitgaveny; J. H. FORSYTH, Lhanforyd; W. ROBERTSON, A. DUFF, J. A. GRIGOR, JOHN COUTTS, C. G. CUMMING, A. MCCONNACHIE, W. ROBERTSON, and the pupils of Belvie School Garden. Vegetables were best shown by J. A. GRIGOR, WILLIAM OGSTON, J. COUTTS, C. G. CUMMING and R. MACDONALD. In the section devoted to ladies' exhibits some good exhibits were displayed, the prize-winners including Mrs. ROBERTSON, New Elgin; Mrs. MANX, Culbard Street, Elgin; and Mrs. RICHARDSON, Aldroughty.

THE NATIONAL HORTICULTURAL SOCIETY OF FRANCE.

OCTOBER 14.—The following new plants, presented by their respective raisers, received Certificates of Merit at the meeting held on the 14th inst.: *Brassa-Cattleya Souvenir de l'Aviateur Péquard*, flowers deep orange, shown by M. MARCOZ; *Brassa-Cattleya La Marne*, with large rose flowers, and *Brassa-Cattleya Dianae*, with large white flowers, shown by M. MARON; *Kniphofia rufa venusta*, with flowers of a fine citron-yellow, without trace of red, shown by M. VILMORIN ANDRIEU AND Co. The Council of the Society has decided to hold a horticultural exhibition (to last for several days) during the first fortnight of November, the receipts to be given to the fund for wounded soldiers.

Obituary.

JAMES BERTRAM.—The death is announced on October 16, at Fountainhall, Pencaitland, of Mr. James Bertram, who was for forty-three years forester on Fountainhall estate. Mr. Bertram was 74 years of age.

E. PRILLIEUX AND FERNAND GUÉGUEN.—The science of mycology has suffered a severe loss in the death of Edouard Prillieux, director of the station for vegetable pathology in Paris. Prillieux, who had reached the advanced age of eighty-seven, was a senator and a member of the Academy of Science. His chief and enduring title to fame is his masterly and lucid treatise on diseases of cultivated plants. Though written many years ago, it is still one of the best, if not the best work on the subject of the fungous pests of plants. Another French mycologist whose death is announced is Fernand Guéguen, Professor of cryptogamic Botany at the Ecole Supérieure de Pharmacie in Paris, and also at the National School of Agriculture at Grignon.

MR. ROBERT NEAL.—We much regret to record the death, on the 26th inst., at the advanced age of 78 years, of Mr. Robert Neal, head of the firm of Messrs. R. Neal and Sons, The Nurseries, Trinity Road, Wandsworth Common. Deceased took an active interest in the nursery business for very many years, and he was held in high esteem generally. The business was founded at Wandsworth nearly 100 years ago by the late Mr. Robert Neal's father, and it will be carried on by the present working partners, Messrs. Albert and Victor Neal, sons of the deceased.

THE WEATHER.

WEATHER IN WEST HERTS.

Week ending October 27.

Cold, Dull and Calm.—This was, on the whole, a cold week, and more particularly was this the case during the daytime. On two days the temperature in the thermometer screen at no time rose higher than 47°, making these two days the coldest as yet this month. On the coldest night the exposed thermometer registered 6° of frost. The ground is at the present time 3° colder at 1 foot deep, and 2° colder at 2 feet deep, than is seasonable. Rain fell on four days, and to the total depth of ½ inch, making this the wettest week as yet this month, and showing how dry for the time of year the weather has recently been. On two days the amount of rain deposited was very small. A gallon of rain-water came through the bare soil percolation gauge during the week, but only a few drops through that on which short grass is growing. The sun shone on an average for 1½ hour a day, which is only half the average duration for the time of year. On three days no sunshine at all was recorded. With the exception of one day, when the wind was at times moderately high, light airs and calms alone prevailed. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 4 per cent. E. M.

GARDENING APPOINTMENTS.

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

Mr. Herbert Currell, for the past 11 years Gardener to J. McEwan, Esq., J.P., Carrishbrooke, Enfield, Middlesex, as Gardener to C. F. HARDING, Esq., Churchfields House, Woodford, Essex.

Mr. J. H. Herdman, previously for 6 years Gardener at Under Fell, Burton, Westmorland, and for the past 3 years with Messrs. THOMAS H. MAXSON AND SONS, Landscape Gardeners, Lancaster, as Gardener at The Elswick Park, Newcastle-on-Tyne.

Mr. E. R. Beames, for the past 6 years Gardener to the Rt. Hon. Lord BRAYNE at Stanford Hall, Swinford, Rugby, as Gardener to CLIFFORD SAKTON, Esq., Whitley House, Frome, Somersetshire. [Thanks for 2s. for R.G.O.F. box.—Eos.]

Mr. Edward Hayton, as Gardener to Mrs. WHITEHEAD, Deighton Grove, York.

Mr. E. A. Smith, late Foreman to E. R. HAWKINS, Esq., Horringer Court, Bury St. Edmunds, as Gardener to the same gentleman at Donnington Lodge, Newbury, Berkshire. [Thanks for 1s. for R.G.O.F. box.—Eos.]

Mr. R. Hines, for 23 years Gardener to the late S. L. COCKS, Esq., Uplands, Diss, Norfolk, as Gardener to Mrs. F. TAYLOR, The Manor House, Diss, Norfolk.

Mr. S. Burgess, as Gardener at the Ranelagh Club, Barnes. [Thanks for 1s. for R.G.O.F. box.—Eos.]

Mr. Henry Poulton, for four years Gardener at Easney Park, Ware, Hertfordshire, as Gardener to H. GERNY AGGS, Esq., Pippbrook, Dorking.

Mr. R. Hines, for 23 years Gardener to the late S. L. COCKS, Esq., Uplands, Diss, Norfolk, as Gardener to Mrs. F. TAYLOR, The Manor House, Diss, Norfolk.

Mr. Edward Timmons, for the past 6 years Gardener to H. L. GAUSSEN, Esq., Brookmans Park, Hatfield, Herts, and previously Foreman to Sir NEVILLE LYTTELTON, Royal Hospital, Dublin, and Botanic Gardens, Glasnevin, as Gardener to Mrs. CROFT, Fanbams Hall, Ware, Hertford.

Mr. Wm. Hiorns, for the past 17 years Gardener to SIR ARTHUR DRYDEN, Bart., Canons Ashby, Byfield, as Gardener to W. GRAZEBROOK, Esq., Thénford House, Banbury. [Thanks for 1s. for R.G.O.F. box.—Eos.]

SCHEDULES RECEIVED.

Society of American Florists and Ornamental Horticulturists, Philadelphia, Pa., March 25 to April 2, 1916. Secretary, Mr. John Young, 53, West 28th Street, New York.

The Perpetual Flowering Carnation Society's nineteenth show, to be held in the Royal Horticultural Hall, Vincent Square, Westminster, on Wednesday, December 8. Hon. Secretary, Mr. T. A. Weston, Floradale, Orpington.

DEBATING SOCIETIES.

WEST OF SCOTLAND HORTICULTURAL.—At the meeting of this Society, held in Glasgow on the 6th inst., Mr. John Highgate, gardener to the Marquis of Linlithgow, Hopetoun House, delivered a lecture, illustrated by a series of coloured photographs, on "The Use of Hardy Perennial Plants in the Embellishment of Present-day Gardens." Mr. Highgate gave much practical advice on the grouping of these popular plants in plots and borders. Comparing the flower garden of the present day with that of twenty years ago one could not, he said, fail to note the marked change introduced by the very general use now being made of the more hardy varieties of perennial plants. Whether the garden was large or small the aim should be to select only those plants and bulbs that would give a display of flowers or foliage over the longest period of the year. He recommended the use of Alpines for edging instead of Box. The introduction of such shrubs as Japanese Maples, Buddlejias, Prunus pissartii, and Roses trained in various forms served, said Mr. Highgate, to relieve flat borders. Gypsophila acutifolia also gave satisfaction, and he emphasised the value of the hardy varieties of Fuchsias.

READING AND DISTRICT GARDENERS'.—The first meeting of the autumn session was held on Monday, the 4th inst., in the Abbey Hall and was well attended. The president, Mr. F. B. Parfitt, presided. The subject for the evening was "The Recent Visit to Bear Wood Gardens," and an interesting discussion ensued on many of the crops noticed, such as Grapes, Melons, Tomatoes, Peas growing under glass, and Cauliflowers; also Sweet Peas in pots for flowering early in the season. Much valuable information was given by Mr. J. T. Tubbs, Gardener at Bear Wood, in his replies to the various questions raised by the members. The competitions added greatly to the interest of the meeting, and resulted as follows:—In "Onlooker's" gift competition for single-handed gardeners, in a class for three vases of flowers, the 1st prize was won by Mr. G. Durrant, The Gardens, Preston, Kendrick Road, with Roses, Chrysanthemums and Dahlias. Mr. Lawrence Castle having resigned the office of hon. secretary, Mr. H. G. Cox, of 80, Hamilton Road, was appointed his successor. The second meeting of the new session was held on the 18th inst., the President, Mr. F. B. Parfitt, presiding over a good attendance of members. The subject for discussion was "Some Good Spring Flowers for the Open Garden," and was introduced in a very able manner by Mr. J. Crook, of Camberley (late of Forde Abbey Gardens, Chard). The lecturer based his remarks upon "Economy in the Garden During War Time," and strongly advocated the use of hardy plants grown from seed, making special reference to Wallflowers, Forget-me-nots, Daisies, Pansies, Violas, Polyanthus, Primroses, Alyssum and Aubrietia. In pointing out their uses he touched upon the grouping of plants in borders, the change in gardening taste with reference to hardy plants during recent years, bulbs in conjunction with perennial plants, carpet bedding of years ago, rock gardening and colour schemes in the garden. Fruit, vegetables, and flowers were exhibited by the members. The best exhibit was shown by Mr. A. H. Fulker, The Gardens, Elmhurst, who staged a collection of Apples and Pears. In the "Points" Competition Mr. A. H. Fulker was awarded 11 points for vegetables; Mr. E. Blackwell, The Garden, Foxhill, 10½ points for Pears; Mr. H. Reeves, Blandford Lodge Gardens, 10½ points for Pears; and Mr. C. Cripps, Sidmouth Grange Gardens, 9½ points for Potatoes.

BRISTOL AND DISTRICT GARDENERS'.—The first of the fortnightly meetings for the winter, 1915-16, was held at St. John's Parish Rooms on Thursday, the 14th inst. Mr. H. Woodward presided. Mr. E. G. Extence read a paper entitled, "Features of Modern Gardening." The lecturer gave a highly interesting account of the great improvement in gardening brought about in recent years.

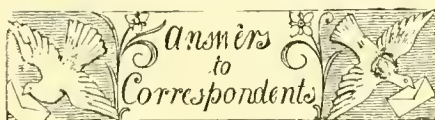
BATH GARDENERS'.—At the meeting of this Society held on Monday, the 11th inst., Mr. H. Matthews read a paper on "Marguerite Carnations." The chair was taken by Mr. T. Parrott, and there was a good attendance of the members. Mr. Matthews said that the Perpetual-flowering Carnation was now so much in favour that the Marguerite varieties were somewhat neglected. But, none the less, their usefulness for cutting or for making a display in beds or borders should not be overlooked. They lacked the quality of the Perpetuals and choicer border varieties, but they furnish quantities of useful flowers for decorative purposes from the time they commence flowering until late in the autumn. A packet of seed of a reliable strain would give a great variety of colour and a good percentage of double flowers. A batch should be raised annually as the plants succeeded best treated as annuals. Sometimes the plants flower exceedingly well the second season, but much depended on air, soil, situation, and climate conditions. Seed should be sown at the beginning of February. The seedlings should be removed to a cool frame, and hardened gradually previous to planting them in the borders. At the end of the summer, if some of the best plants are carefully lifted, potted, and placed in a cool house, they will continue to flower for some time.

NORTH OF SCOTLAND HORTICULTURAL.—The session 1915-1916 of this Association was inaugurated on Wednesday, the 20th inst., in the Botany Classroom, Aberdeen University. There was a good attendance, and Mr. Robson, of Messrs. W. Smith and Son, Aberdeen, occupied the chair. Mr. Magnus H. Sinclair, Aberdeen, gave a paper on "The Tulip," in the course of which he traced the history of the flower from centuries back. Much interest was evinced in Mr. Sinclair's remarks, and at the close of the lecture a discussion among the members followed.

WARGRAVE AND DISTRICT GARDENERS'.—On Wednesday, the 6th inst., a well-attended meeting of the above association was held, when the hon. secretary (Mr. H. Coleby) lectured on analysis of the soil. The chief plant foods to be found in good soil were described, and it was pointed out that their presence was necessary to the production of satisfactory flowers, fruit and vegetables. Lime was shown to be indispensable. The lecture was followed with the closest attention, and many questions were asked at the end. It was decided to abandon the proposed Chrysanthemum show in November. The meeting on the 20th inst. was well attended. Mr. S. Wheedon, foreman at Parkwood Gardens, read a paper on the "Herbaceous Calceolarias." He gave full particulars of the cultivation of the plant from the time of seed sowing to the flowering stage.

CATALOGUES RECEIVED.

HILLIER AND SONS, Winchester.—Trees and Shrubs.
THOS. S. WARE, LTD., Feltham, Middlesex.—Fruit Trees, Roses, Shrubs.
E. P. DIXON AND SONS, LTD., Hull.—Fruit Trees, Roses, Trees and Shrubs.
CHARLES TURNER, Slough.—Roses.
ELISHA J. HICKS, Hurst, Twyford, Berks.—Roses.
J. CHEAL AND SONS, LTD., Crawley, Sussex.—Trees, Shrubs, Roses, Fruit Trees.
JESSE HANDSCOMBE, Feltham, Middlesex.—Caroations, Picotees, Pinks and Hardy Perennials; Peat and sundries.
R. C. NOTCUTT, Woodbridge.—Nursery Stock.
JAMES COCKER & SONS, Aberdeen.—Roses and new Hardy Plants.
W. WELLS & CO., LTD., Merstham, Surrey.—Chrysanthemums.
CLIBRANS, Litchingham.—Herbaceous and Alpine Plants, and Roses.
C. P. KINNELL & CO., LTD., Southwark, S.E.—Heating Appliances, etc.
FENNICK & CO., Delgany, Dublin.—Flowering Shrubs, Fruit Trees, etc.
G. COOLING & SONS, Bath.—Roses and Fruit Trees.



A NEGLECTED VINE: Regular Reader. Take out a trench along the border 6 feet from the front of the house and sever all the roots found therein. This is best done whilst the leaves are still green. It may be necessary to dig down 3 or 4 feet to make sure of cutting through all the roots, which sometimes ramify for a long distance, especially when the border has been dug and cropped as yours has been. Mix a little slaked lime with the soil—about a 6-in. potful to each barrow-load—and add wood ash or charred vegetable refuse before refilling the trench. Apply lime and charred refuse also to the surface of the 6 feet border and fork the materials in the soil. During the spring and summer two or three applications of a concentrated Vine manure may be made, but not after the berries commence to colour. If the situation of the border is warm, place a slight covering of stable manure over the latter in June, and water it copiously in dry weather. Shorten all green shoots at once sufficiently to admit light to every one of the earliest-formed leaves, and when all the green colour has disappeared thin out the rods so as to leave a space of not less than 3 feet between them. Then cut the laterals—i.e., the fruit-bearing side shoots—back to one or two eyes, one of which only should be allowed to develop when disbudding, and preferably the one arising from the upper side of the spur. Should your Vine be grown out of all order so that neither the main rods, spurs nor prominent eyes are situated where they should be, follow these instructions as far as circumstances permit, and train up young rods from the base for future cropping. Immediately after pruning paint the Vine all over with 2 ounces of soft soap to a quart of water and as much flowers of sulphur as will make the mixture of a thick consistency. Do not syringe the vines or the sulphur will be washed off; this must be left on to kill the spores arising from any mildew which may have escaped destruction by the soft soap in spring and summer.

BRAMBLES: A. L. B. The Loganberry is still the best commercial fruit of the large number of Brambles grown for their berries. The Himalaya Blackberry will probably be successful as a Blackberry, but up to the present the plant has not been tried commercially.

CARNATION RUST: J. R. Lewis. We have submitted your query to our correspondent who recommended Gishurst Compound for destroying rust on Carnations (p. 213), and he states that the specific may be used at a little greater strength than is recommended by the makers, but the plants must be washed thoroughly with clear water one hour after the application.

DESIGN FOR EFFECTIVE FLOWER BEDDING: E. L.—The bed opposite the Rose garden shown in your rough sketch could be filled with Antirrhinums, which would flower all the season, and there is a great variety of colours that would harmonise with the Roses. Varieties of intermediate height are the most useful for bedding; but the dwarf varieties could be used for the front and the tall ones for the back of the border. The plants are easily raised from seed sown indoors about the end of January or beginning of February. An alternative plan is to fill the bed with a good selection of hardy annuals, but they would only give a display for a short season. The season of blooming could be prolonged by planting early-flowering Chrysanthemums in the reserve garden, from which they could easily be transferred to the bed after the annuals are over. Some indication as to the class of plants you would like for the bed would have been helpful.

GRAFTING MUCILAGINOUS TREES: D'ton. Trees belonging to the two Natural Orders you mention—Tiliaceae and Sterculiaceae—can be successfully grafted, but budding cannot be recommended except for those of Tiliaceae. The grafting is usually done in early spring, but good results have been obtained by grafting in September or October just before the fall of the leaves. In the latter case the plants must be kept as cool and dry as possible after union has taken place, as in a high temperature they commence to grow during the winter months and will probably go wrong during the following summer through not having experienced their natural rest. Buettneria belongs to Sterculiaceae.

GRAPE FOR PLANTING WITH BLACK HAMBURG: Violet. Royal Muscadine is the best green or white Grape to plant in the same house as Black Hamburg, but it is small in berry. If you require a variety with larger berries choose Foster's Seedling. Muscat of Alexandria, the best flavoured of all the large Muscats, sometimes does fairly well in favourable seasons at the warmer end of a Hamburg house, but this Vine requires plenty of light and good attention.

KEEPING CUT FLOWERS FRESH: Amateur. We do not think that the method you suggest of sealing the ends of the stems of cut flowers would do much, if anything, to keep them fresh. There are, however, several ways of preserving flowers for a considerable period. For instance, to place in the water a small quantity of saltpetre, vinegar, ammonia, or charcoal has a good effect. If plain water is used it should be changed every day, and a fresh cut made across the stems of the flowers. Hard stems, such as those of Roses, should be split a little way up. The time at which the blooms are cut influences their keeping properties. Flowers cut in the early morning or evening keep best, as they contain more moisture when they have not just been exposed to the drying rays of the sun. If it should be necessary to gather them in the day-time their stems should be immediately plunged in hot water. Buds or flowers not fully expanded last longer than those which are quite out.

NAMES OF FRUITS: W. D. and S. 1. Le Lectier; 2. Vicar of Winkfield; 3. Hacon's Incomparable; 4. Flemish Beauty.—*Horsford.* 1. Calville St. Sauven; 2. Blenheim Pip.

pin; 3, Striped Beefing; 4, Adams' Pearmain.—*Mrs. Hope*. 1, Beurré Clairgeau; 2 and 3, Uvedale's St. Germain.—*J. W.* 1, Grange's Pearmain; 2, Beauty of Kent; 3, Colonel Vaughan; 4, Durondeau; 5, Domino.—*R. M. F.* Peach over-ripe and smashed in the post.—*East Berks*. 1, Sam Young; 2, Bramley's Seedling; 3, Wellington (Dumelow's Seedling); 4, Madame Eliza; 5, Aston Town.—*T. Bradley*. 1, Cox's Pomona; 2, Cox's Orange Pippin.—*T. H. C.* 1, Cox's Orange Pippin; 2 and 8, Small's Admirable; 3, Lord Derby; 4, Lane's Prince Albert; 5, Deans' Codlin; 6, King of the Pippins; 7, Striped Beefing; 9, decayed.—*J. W. B.* 1, Newton Wonder; 2, Chelmsford Wonder; 3, Lane's Prince Albert; 3, Wormsley Pippin.—*D. McI.* 1 and 2, Warner's King; 3, Yorkshire Beauty; 4, Small's Admirable; 5, 8 and 14, Lane's Prince Albert; 6, Queen Caroline; 7, Melon Apple; 9 and 17, Annie Elizabeth; 10, Northern Greening; 11, Ribston Pippin; 12, Golden Noble; 13, not recognised; 15, Twenty Ounce; 16, not recognised; 18, not recognised; 19, Bramley's Seedling; 20, Potts' Seedling; 21, Lady Henniker.

NAMES OF PLANTS: *J. H. Chilton, Darlington*. 11, *Pyrus prunifolia*. The numbers were missing on the other specimens; the small-fruited Crab Apple is *Pyrus baccata*, and the large-fruited one *Pyrus Ringo*. The Conifer is *Sequoia sempervirens*.—*W. Treseder, Ltd.* *Crataegus oxyacantha* var. *atrofusca*.—*Barnmouth*. 1, *Iloya bella*; 2, *Chlorophytum elatum* var. *variegatum*; 3, *Omphalodes verna* (Creeping Forget-me-not); 4, *Pieris formosa*; 5, *Cotoneaster Franchetii*; 6, *Tsuga Mertensiana*; 7, *Aspidium angulare*.—*R. W.* *Polygonum vaccinifolium* and *Ceanothus azureus*.—*Poppo*. The plant in flower is *Clitoria Ternatea*; the other specimen resembles *Melia Azedarach*; send when in flower. *P. H.* 1, *Minulus glutinosus*; 2, *Ruellia Portellae*. *W. S.* *Tibouchina semi-decandra*.

PEARS FOR PLANTING: *Violet*. The following varieties of late Pears are suitable for growing as pyramids: Duchesse de Bordeaux, Joséphine de Malines, Marie Benoist and Winter Nellis. For training as fan specimens against a south wall select: Bergamotte Espren, Beurré Dubuisson, Beurré Rance, Duchesse de Bordeaux, Glou Morcean, Joséphine de Malines, Marie Benoist, Nouvelle Fulvice and Bickling. The following dessert Apples are crisp and juicy and suitable for growing as single, upright cordons: Roundway Magnum Bonum (rather large for dessert purposes but of excellent flavour), American Mother and Adams' Pearmain.

PLANTING A SMALL LONDON GARDEN: *R. S., London*. You state "my father has a garden in North London, about 36 yards long and 21 yards wide, enclosed by a fence 5 feet 6 inches high. The soil is a heavy clay loam. What is the best system to adopt to crop it with vegetables, and how could it be made to appear pretty as a flower garden?" For growing vegetables it would be best for convenient working to divide the garden into four quarters, divided by paths 2 feet wide; if the cropping space is not an important consideration the paths might with advantage be 3 feet wide. If desired, the garden could be screened from the house by a trellis of Roses. Choice Plums, Red Currants and Gooseberries may be planted against and trained on the fence. If it is desired to devote the garden to flowers it might, if they do well locally, be largely planted with Roses. The fences could be covered with climbing Roses in variety, while a wide border might be made all around the fence, thus leaving the centre open as a lawn. The borders in part could be planted with other flowering subjects, such as choice hardy herbaceous plants and Violas. If the borders are planted all around with flowers a few half standard Apple trees may be included at 15 feet intervals. The trees would not interfere with the growth of the flowering plants. Varieties of Apples that do not make large heads should be chosen. The

Dartmouth and John Downie Crabs are ornamental, and their fruit makes excellent jelly. If desired a variety of choice flowering shrubs could be used to furnish the borders. Whatever subjects are employed, have the design as simple as possible, and do not spoil the lawn by making little flower beds on it.

PRIZE CUP: *P., Reigate*. It is understood that the cup you mention was won by you to be held for one year only. If this be the case you can hardly expect to keep it for an indefinite period when no show is held. The proper thing to do in such circumstances is to return it to the society, to whom presumably it belongs, especially when requested to do so by a responsible official of the society.

SEEDLINGS OF TROPICAL PLANTS: *Java*. All the plants mentioned in your list of seeds are strictly tropical, and require a stove temperature. In the winter months a temperature ranging from 60° to 70° should be maintained, but during the summer it may with advantage be allowed to rise from 80° to 90°. As the majority of the seeds are likely to be some considerable time before they germinate, it would be advisable to sow them at once, plunging the pots in a bed of Coco-nut fibre or tan, and maintaining a bottom heat of 75° to 80°. A bed of this description is usually placed above the hot-water pipes, to furnish the necessary warmth. As the seeds germinate, place the seed-pans on a shelf near the roof-glass. When the seedlings become large enough to handle, they may be potted singly into small pots. Keep them close and shaded from bright sunshine for a time. About one-half of the plants contained in your list are Palms, the others are shrubs or small trees, many of them being of no decorative value in this country. None of them can be classed as climbers, although *Bauhinias* are sometimes trained on the roof of stove-houses. The following are all shrubs, and when known, the colour of their flowers are added:—*Asclepias curassavica* has orange-red flowers, and may be grown in a greenhouse temperature; *Bauhinia purpurea*, *B. racemosa*, white, *Cassia alata*, *C. floribunda*, *C. glauca* and *C. Sophera* all have yellow flowers; *Clerodendron floribundum*, white; *Hibiscus Abelmoschus*, yellow, with chocolate centre; *Caesalpinia pulcherrima*, orange-yellow; *Gardenia tubiflora*, white; *Lagerstroemia Flos-Reginae*, pink; *Melia Azedarach*, light-purple; *Mesua ferrea*, white; *Mussaenda frondosa*, yellow flowers, with large white bracts; *Spathodea campanulata*, orange; *Rauwolfia sumatrana spectabilis*, *Solanum grandiflorum* and *Sterculia foetida* we do not know. The remainder in your list are Palms; these should be grown in the warmer end of the plant stove.

SEEDS OF DOUBLE STOCKS: *A. S. W., New South Wales*. To obtain a large percentage of plants with double flowers it is necessary to save seeds from the plants which have the greatest number of petals, together with pistils and stigmas. That is to say, you must select as seed bearers the singles which have the most petals, because true double flowers have no reproductive organs. If the selection is well done the next generation will contain a large proportion of double flowers, so large, in fact, that it will be difficult to obtain any quantity of seed from them. If, therefore, you require seed regularly it will be necessary to save a stock of seed from plants nearer the single type.

SLUG ON PEAR TREE: *V. C.* The insect attacking your Pears is the Pear slug worm, *Eriocampa limacina*. One remedy is to remove and burn the surface soil, but if this is not practicable the trees should be sprayed with arsenate of lead. Only one dressing is necessary, as it sticks to the foliage for some time. Powdered Hellebore is another remedy which is often employed with success, or soot and lime thrown over the trees with a sulphurator. In order to prevent future attacks, soot and lime should be sprinkled under the trees.

SOIL FOR CACTI: *A. L. B.* For the successful cultivation of Cacti in pots it is essential that

the potting compost should be of a porous nature. A suitable mixture consists of about one-half good fibrous loam, the other half may be made up of mortar rubble, broken bricks, and sand in equal quantities. The mortar rubble and bricks should be broken into small pieces, varying in size from $\frac{1}{4}$ inch to 1 inch in diameter. The materials should be mixed thoroughly together, and used in a moderately dry state.

SWAINSONIA GALEGIFOLIA: *E. L.* *Swainsonia galegifolia* may be wintered in an ordinary greenhouse. If some of the shoots grow too long and straggling they may be shortened early in the New Year.

TOMATO-GROWING ON A SMALL HOLDING: *Pembroke, Bedford*. Tomatoes are a doubtful crop in the open in this country, even when trained against warm brick walls, for the Tomato requires a warm, dry summer. As there is a good market in your town, Tomatoes could be grown profitably in a glasshouse devoted entirely to the plants during their season. To command the highest prices the plants must be managed so as to be fruiting early in the season, and for this much fire-heat is necessary. As fuel is very dear, it is questionable if early forcing will pay, and we would rather advise you to defer planting until about the middle of March, because this will considerably reduce the period during which fire-heat will be necessary. As you apparently intend to grow Tomatoes on a comparatively small scale, you would find it most economical to purchase seedling plants when you require them, rather than to raise your own. If you send a small sample of your soil we will express an opinion as to its suitability for Tomatoes, but we do not undertake to analyse soils. If you decide to combine outdoor with glasshouse cultivation, the best plan will be, when planting the house, to pot into 5-inch pots the number of plants required for the open, and after duly hardening them, plant them out-of-doors early in June. For cultural hints you should follow the advice given in "The Week's Work," or, if you are a novice, it would be well also to study such a book as *Tomato Culture for Market*, which may be obtained from our Publishing Department, price 1s. 1d., post free.

TULIP BULBS DECAYED: *C. K.* The injury is caused by *Sclerotinia parasitica*, usually known as Tulip Mould. The bulbs are quite useless, as there is no cure for this disease. Moreover, the soil in which they have been growing will be highly infectious, and should on no account be used again until it has been thoroughly sterilised. Even then it will be safer not to use it again for growing bulbs.

WHITE FLY ON TOMATOS: *C. S.* To destroy white fly the house should be fumigated occasionally with nicotine vapourising compound, or with hydrocyanic gas. The latter is rather dangerous to use, and its application should not be entrusted to any but a responsible person. Another method of destroying the pest is the introduction into the greenhouse of a parasite on the white fly, which quickly destroys it. The parasite can be supplied by Prof. H. M. Lefroy, the R.H.S. Gardens, Wisley, Ripley, Surrey.

WICHURIANA ROSES FOR A BANK: *A. W. M.* For effective blossoming choose Dorothy Perkins. Lady Gay has finer flowers, and the foliage is, perhaps, less subject to mildew, but the plant does not give late sprays of blooms, as in the case of Dorothy Perkins. Some of the newer varieties, such as Chatillon Rambler, are very fine, but at present this variety is not much grown. For beauty of foliage there is none superior to American Pillar, but the colour would not blend well with Dorothy Perkins.

Communications Received.—*J. P.*—*W. J. S.*—*H. D. McI.*—*W. B. H.*—*R. P. B.*—*W. T. W. H. W.*—*G. W. W.*—*A. R. G.*—*A. B. J.*—*A. J. C.*—*E. S. S.*—*Concervateur*, Neuilly.—*A. H.*—*H. G. P.*—*R. H.* & Co.—*H. E.*—*A. O.*—*J. M.*—*D. MacI.*—*Devon R.*—*S. B.* & Son.—*F. J.*

THE Gardeners' Chronicle

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THE CHERRIES OF NEW YORK.*

A CAREFUL study of the commercial Cherry orchards of this country will show that the nomenclature of varieties is in a state of extraordinary confusion. A Cherry may be grown in six different localities and possess perhaps as many names.

The appearance of a new monograph on the Cherry is therefore of much importance, and a special welcome will be accorded to Professor Hedrick's latest work. All students of pomology are familiar with the excellent work which is being done at the Geneva Fruit Station under Professor Hedrick's guidance, and the volumes on Grapes and Plums which have appeared have raised a new standard. *The Cherries of New York* falls in no way behind its predecessors. The careful analysis of the species of *Prunus* which have been the progenitors of the Cherry, the historical introduction, and, last but not most important, the detailed and systematic descriptions of the fruits themselves, are of the greatest interest.

Within the limits of a review it is difficult to point out the many good features of such a work, leaving at the same time space for such small criticisms as all reviewers, in self-justification, feel bound to include. Reference must, however, be made to the very interesting discussion on the groups or families of Cherries. The

two species of *Prunus* from which our garden Cherries are derived are, as is well known, *P. avium* and *P. Cerasus*.

From the first come the Bigarreus and the tender-fleshed Geans; the large, pendant leaves of this species are a feature easily recognisable. From *P. Cerasus* we get the sour Cherries, the Morellos, Amarels and Montmorency types. The crossing of the descendants of these two species has given us the so-called "Duke" race, of which May Duke is a well-known representative. The hybrid nature of this race is evident from many facts. The intermediate form of the leaves, the bitter-sweet taste of the fruits, and the tendency to bud variations are perhaps the most striking. In the last matter it is difficult to agree with the author when he says, on p. 9, that "no Cherry is known to have come from a sport or bud mutation." He has himself provided such evidence on p. 231 in describing the *Cerise de Bicentenaire*, "which is supposed to be a bud variation of Royal Duke." The Cherries Royale l'Aout and Morello de Charmeux are both reported to have originated in this manner, and in the *Revue Horticole* (No. 15, 1914) a still more interesting case was reported where a May Duke produced Bigarreus fruits upon one branch intermixed with normal May Dukes. Other evidence exists proving the instability of the Duke Cherries and confirming the probability of their hybrid nature.

The very full descriptions of the individual fruits are on the lines of the previous works in this series, and the important varieties are treated in the greatest detail, while others of less importance are relegated to an appendix. It would be difficult to find any variety which is not mentioned in the one or other of these lists. It is hardly possible to attempt any real criticism of this portion of the work; nothing but a prolonged acquaintance will fully reveal its qualities. A glance, however, shows that there are a few points which merit discussion. It is doubtful if Professor Hedrick has figured and described the true Black Tartarian. This is still much confused in this country. The true variety is well figured in Lindley's *Pomona Britannica* and also in Mackintosh's *Flora and Pomona*, and the very uneven surface and the jet black colour are well depicted. The figure given by Professor Hedrick shows an altogether smaller fruit of even outline and surface. It may be that this is the false variety often grown in Kentish orchards as Black Tartarian.

In view of the great confusion existing in the Kentish or Montmorency race of Cherries, it is particularly interesting to see the latest attempts at their disentangling. To the Early Richmond of America are referred the synonyms *Cerisier Hâtif*, *Cerise de Volger*, and *Early Griotte*. This is the large early red Cherry grown in Kentish orchards and known as "Kentish" in some districts and "Flemish" in others. The later variety of more twiggy and dense habit which forms a round-headed tree is described under the name of Mont-

morency. It is, however, doubtful if this is the real Montmorency of France, which is now little if at all grown in that country on account of its infertility. The Montmorency described by Professor Hedrick is said to be very fertile and is probably the later Kentish or Flemish grown in this country. The freedom with which all these Amarels can be raised from seed and the varying types which they produce add greatly to the difficulties of their systematic description, and around them have waged many pomological controversies. The task of reconciling existing sorts with those described by the older authorities seems almost hopeless in this section.

The coloured plates are always a feature of Professor Hedrick's works, and though not so effective as those of the Plums and Grapes of previous volumes, this is no doubt due to the greater difficulty presented by the Cherry from the point of view of colour photography.

The proof-reading has been carefully done and but few slips are noticeable. On p. 30 Waterloo Cherry is placed among the light-coloured Geans, and in another place the Gironde is misspelt. These are, however, but minor details which do not affect our appreciation of the enormous amount of work which has gone to make this valuable book. All who are interested in Cherries will desire to procure a copy, as although from the title it might be thought to be of local interest mainly, it actually treats of Cherries from all parts of the world. The book is not published for sale, as it is printed for and distributed to the fortunate dwellers in New York State; it may, however, be procurable later on at second hand. A copy can be seen at the Lindley Library. *E. A. Bunyard.*

TREES AND SHRUBS.

MAGNOLIA DELAVAYI.

MAGNOLIA DELAVAYI bloomed here out-of-doors for the first time this summer. The shrub should prove a valuable subject for training on walls. The evergreen leaves measure up to 14 inches long and 8 inches wide, and are, I believe, larger than those of any other hardy evergreen shrub. The tree is a rapid grower, increasing about 2 feet in height each season, and has the great merit for a wall shrub of sending out a succession of shoots from the base, so that the stem is not bare at the lower part.

The yellowish-white flowers are produced at the beginning of August, and are almost as large as those of *Magnolia grandiflora*. They appear, unfortunately, to have only a short life, lasting for about three days, but this may possibly be compensated for, as is often the case, by their being produced freely. Of this, however, it is not possible to be certain until the plants have attained the age at which they flower to the full.

The largest plant growing here measures about 9 feet high by 9 feet across. Though somewhat difficult to establish, the species would appear to be quite hardy away from a wall, if planted in a sheltered place. *Henry D. McLaren, Bodnant, Taly-Cafn, North Wales.*

* *The Cherries of New York*. By U. P. Hedrick. State of New York. (Department of Agriculture, Albany, J. B. Lyon Company, State Printers.)

ORCHID NOTES AND CLEANINGS.

SEEDLINGS AT BRACKENHURST.

THE illustration in fig. 99 represents the interior of one of the new houses at Brackenhurst, Pembury, Tunbridge Wells, built by Mr. J. Gurney Fowler for the raising of seedling Orchids. The house is one of a block designed by Mr. T. Armstrong, of Messrs. Armstrong and Brown. It is generally believed that bad results in the raising of seedling Orchids are due to unsuitable accommodation as much as to wrong treatment, including the practice of subjecting the seedlings to changes of temperature and atmospheric conditions in their earlier stages. These difficulties are obviated at Brackenhurst by providing a special division for the plants until they are sufficiently strong to permit of their being shifted to a rather cooler division at the entrance. Thus the whole house is practically a seed-raising case on a large scale. The seeds are germinated in a case arranged at one end of the house, the cases being fitted with sash-lights, which are always kept open, as shown in the illustration, their use being chiefly to check cur-

visit made on October 16 last showed that remarkable progress had been made by the little plants which now fill the greater part of both divisions.

POLYSTACHYA PANICULATA.

IN *Gard. Chron.*, August 7, 1915, fig. 28, is a drawing of *Polystachya paniculata*, with a reference to the July issue of the *Botanical Magazine*, which describes this species as a West African Orchid.

IN *Gard. Chron.*, Vol. XLVIII., p. 462, the same drawing appeared, and the plant was there mentioned as having been sent to the late Sir Trevor Lawrence from Uganda. I sent Sir Trevor his plant in 1910, and should be interested to learn if the plant was also found about the same time in West Africa. I believe my plant was the first one sent to Europe, and in the note accompanying your first illustration of the plant it is described as a new species from Uganda. Has an error been made in the *Botanical Magazine* in describing the habitat of the plant, or merely a too exclusive distribution allowed to the species? *E. Brown, Kiruru, Uganda, British East Africa.*

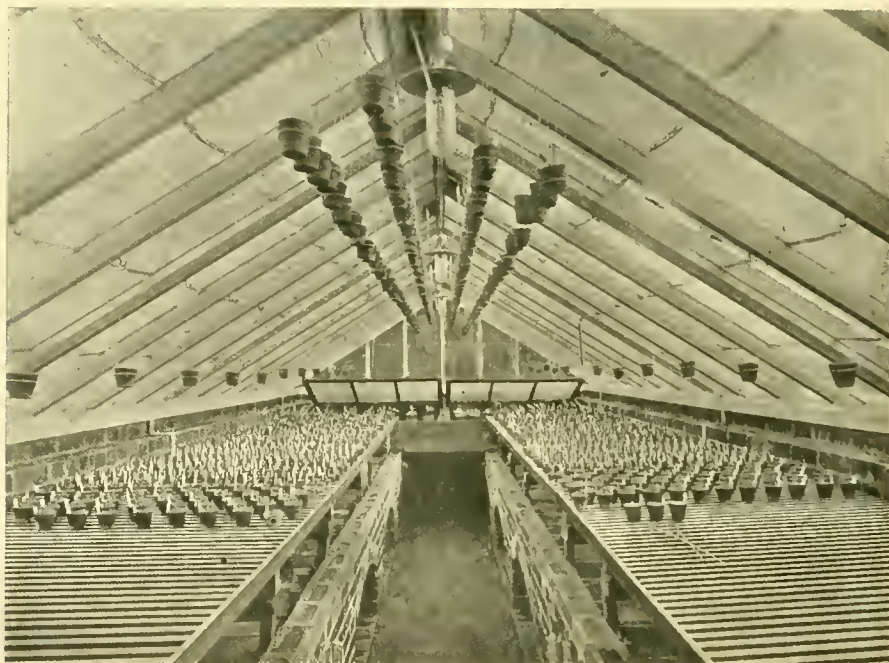


FIG. 99.—ORCHID SEEDLINGS AT BRACKENHURST.

rents of air from the end of the house and to prevent drip from above.

At the time of our visit the temperature in the case was 88°, whilst that of the house was 78°. The established seedlings are grown on the stagings or suspended overhead. In a few months some are ready to occupy single pots. Many of those shown in the illustration were raised in the spring of 1914. The staging is arranged on arched brickwork, which acts beneficially in distributing the heat from the six rows of 4-inch hot-water pipes up each side of the house, and also in automatically giving off moisture proportionately to the temperature, a point of the highest importance. To the same end the close staging is of porous red tiles resting on angle-irons. The upper staging of open woodwork is painted with oxide of iron over a coating of white lead, the reddish-brown colour harmonising with the colour of the flower-pots. The seed-raising case has a hot-water tank with flow and return, its metal surface being covered with shingle to give off moisture. The seed-pots stand in shallow pans of water resting on inverted flower-pots and everything is kept scrupulously clean.

The photograph was taken a year ago, and a

CERTIFICATED ORCHIDS.

IT frequently occurs that handsome Orchids which have already secured First-class Certificates or Awards of Merit are shown again, though not eligible for further recognition; unless in the case of a plant which obtained an Award of Merit, which may receive a First-class Certificate. Such plants are often remarked on by visitors, who enquire why they are not recognised by the Orchid Committee. Mr. J. Gurney Fowler, the chairman of the Orchid Committee, has taken this matter in hand, and enamelled plates, showing the award previously given, are now available to place in front of the plants which have previously received awards. These tablets convey the information required, and serve the purpose of calling attention to recognised good forms in which the public may be interested.

It is imperative, however, that the specimen before which the ticket is placed should be either the actual plant which received the First-class Certificate or Award of Merit, or a portion of that plant. The tablets were used for the first time at the meeting on Tuesday, the 26th ult.

FRUIT REGISTER.

APPLES SUBJECT TO CANKER IN A GLOUCESTERSHIRE GARDEN.

IN many districts some of the best Apples are liable to canker, and in such cases it is very little good planting them unless in small quantities or on a specially-prepared site. There are various opinions as to the cause of canker, but probably insufficient drainage and a cold, heavy soil contribute to the development of the disease. This theory would seem to be borne out by the fact that varieties which suffer in one district are immune in another. Among culinary Apples, Peasgood's Nonesuch suffers severely from canker with us. Lord Suffield is also very subject to the disease; but, nevertheless, we usually obtain fairly good crops. Lord Grosvenor and Grenadier are useful substitutes for the latter variety. Potts's Seedling suffers badly, and so does Cellini Pippin, with the result that the affected branches produce fruits greatly reduced in size. Blenheim Pippin is not a success here; the trees are all cankered. In Warner's King we have another variety that suffers badly; but Tower of Glammis is an excellent substitute. The latter never fails to produce a full crop, and the fruits are fit for use from October until December. Gascoyne's Seedling and Lord Derby are both affected in a less degree; the former gives good results as a bush tree on the Paradise stock.

Among dessert varieties, Cox's Orange Pippin cankers badly, especially the orchard trees; but young bush specimens are fairly free from the disease. Good results are obtained by growing this Apple as a cordon against a wall, and a south-east aspect is very suitable. We find Allington Pippin very satisfactory and far more reliable than Cox's Orange Pippin. Ribston Pippin cankers badly, and the young growths are often attacked. Claygate Pearmain is a good substitute for Ribston Pippin: so far it is free from canker and crops more freely. King of the Pippins also suffers, the older trees being the more subject to canker. Worcester Pearmain is attacked to some extent, but as it is a free grower the difficulty is fairly readily overcome.

Young trees should be examined for canker every year, and branches that are badly attacked should be removed, especially the young ones. Cankorous growths on the older branches should be cut out with a sharp knife and the wounds dressed with gas-tar. By these means it is often possible to keep the disease in check, as branches carefully treated will heal. The garden of which I write is situated on an eastern spur of the Cotswold Hills, 600 feet above sea level. The subsoil is chiefly oolite, but in places it is bordering on a heavy clay. *J. Gardner, Gloucestershire.*

THE ROCK GARDEN.

SAXIFRAGA FORTUNEI.

AN October-flowering rock plant is, *ipso facto*, worthy of consideration; and *Saxifraga Fortunei* has much to commend it, apart from its autumnal flowering habit. The leaves are neat and striking at all times, with a decided tendency to bronzy tints; and in mid-October 8- to 10-inch spikes of creamy flowers, daintily poised on red stems, rise from them. Although said to be tender, the plant withstands the winter well here, in a gritty, well-drained soil on flat ground, and needs remarkably little attention, being of easy growth and not rampant. In bleaker districts a sheltered slope would, no doubt, be safer. The plant is propagated by division, or by seed when obtainable. Divided portions take a little time to establish themselves, flowering more freely in the second year than in the first. *E.*

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LII).

LE COMMERCE DES BANANES.

La consommation des Bananes a pris dans les vingt-cinq dernières années une extension considérable. Ce fruit d'usage courant pour l'alimentation de la population indigène dans les régions tropicales, a surtout été apprécié en Europe à la suite des efforts faits par les compagnies de navigation, et de la substitution aux variétés ordinaires d'autres d'un goût plus agréable. Aux Iles Canaries, la Banane faisait depuis longtemps l'objet d'une exploitation industrielle, mais ce n'est que depuis peu d'années que les Bananiers croissant à l'état sauvage dans d'autres pays ont été traités rationnellement. Aujourd'hui, dans toute région située dans une zone tropicale, pourvue de terres fertiles et gratifiée d'abondantes précipitations atmosphériques, le Bananier est considéré comme une des plantes de la plus haute valeur. Dans tous les cas, la Banane rend des services pour l'alimentation de la population indigène, et si la possibilité d'un service de navigation rapide avec l'Europe est envisagée, le rôle que sa culture peut jouer au point de vue du développement économique du pays est certainement une des préoccupations constantes de ses dirigeants.

Outre les Iles Canaries, la culture en grand en vue de l'approvisionnement des marchés européens s'est aussi établie dans les Indes Occidentales et l'Amérique Centrale. Ces derniers pays consacrent également une partie importante de leur production aux marchés de l'Amérique du Nord où la Banane est devenue plus rapidement populaire qu'en Europe.

Le gouvernement anglais a vivement encouragé l'extension de la culture, comme moyen pour mettre en valeur certaines colonies. C'est ainsi qu'une société qui s'occupe de plantations en Jamaïque et de l'importation des Bananes, a reçu un subside total de plus de dix millions de francs, réparti sur dix années, en vue de lui permettre de développer son commerce. Dans certains milieux anglais, et spécialement dans les milieux de producteurs qui voient dans la Banane une concurrence pour les fruits indigènes, ce subside a été vivement critiqué. Il l'a été d'autant plus que, suivant d'aucuns, la compagnie intéressée s'occupe autant et peut-être davantage d'importer des Bananes cultivées en Amérique Centrale et que, par conséquent, les subventions n'ont pas été employées uniquement à l'amélioration des conditions économiques dans la colonie.

Quoi qu'il en soit, la consommation des Bananes a pris en Angleterre des proportions énormes. C'est peut-être le fruit le plus populaire, qu'on peut se procurer dans les magasins les plus renommés du Westend comme chez l'humble colporteur des quartiers pauvres, qui le débite à un prix analogue à celui des Oranges, c'est à dire un, deux ou trois par penny, selon la qualité.

Les Bananiers meurent après la production du fruit, mais des drageons se développent immédiatement. Il leur faut, du moins en Amérique Centrale, douze mois pour amener les fruits à point. Souvent on maintient trois drageons, d'âge différent, de façon à obtenir, sur une même souche, des fruits tous les quatre mois, ce qui permet d'assurer une production ininterrompue pendant toute l'année, chose éminemment désirable au point de vue de l'utilisation du matériel d'expédition et de la main-d'œuvre.

La fructification a un aspect assez singulier. Les fruits appelés "doigts" à cause de leur forme, sont groupés en "mains," nom dû également à leur apparence, qui elles-mêmes sont insérées directement sur le prolongement de la

tige. L'inflorescence reste longtemps cachée entre les bases des feuilles qui constituent une fausse tige; ce n'est qu'au moment de la floraison que la tige réelle se projette au dehors. La fructification entière est connue sous le nom de "régime." Celui-ci compte généralement dix à quinze mains et cent cinquante à deux cent cinquante doigts.

(A suivre.)

NOUVELLES DIVERSES.

LE COMTE DE HEMPTINNE, dont l'exécution par les Allemands vient d'être annoncée, est l'orchidophile de St. Dens Westrem. On ignore les motifs exacts pour lesquels M. de Hemptinne a été condamné. Sa perte sera vivement sentie dans les milieux horticoles où le comte de Hemptinne était très connu. Comme amateur d'Orchidées il s'était acquis une grande réputation.

NOUVELLES DE LA GUERRE. — Nous avons annoncé que M. Adnet, bien qu'avant perdu l'usage d'un bras, avait tenu à reprendre son service. Il a été frappé d'une congestion cérébrale qui a failli lui être fatale. Il commence à reprendre l'usage de ses membres et les nouvelles sont rassurantes.

INSTITUT NATIONAL AGRONOMIQUE. — Le Ministre de l'Agriculture vient de décider la réouverture de l'Institut National Agronomique, qui jusqu'à présent n'avait pu recommencer ses cours par suite de la mobilisation. Cette décision vise à permettre aux administrations dont les agents proviennent de cette école d'assurer le recrutement de leur personnel. Des mesures spéciales seront prises pour que les candidats à l'Institut agronomique et les élèves de cette école, qui auront été mobilisés, se trouvent, au point de vue des carrières qu'ils poursuivent, dans des conditions au moins aussi avantageuses que si la guerre n'avait pas eu lieu. Ces mesures sont actuellement en préparation.

EXPOSITION HORTICOLE À PARIS. — La Société Nationale d'Horticulture de France organise une exposition de Chrysanthèmes et de fruits au profit des blessés militaires. Elle aura lieu les 6, 7 et 8 Novembre à l'Hôtel de la Société, 84 rue de Grenelle, à Paris.

LES LEGUMES À PARIS. — Suivant l'*Echo de Paris*, les cours des légumes restent élevés. Les Pommes de terre valent de 18 à 20 francs les 100 kilos; les Choux, 50 à 75 francs le cent; les Choux-fleurs, 50 à 80 francs le cent; les Carottes, 40 à 50 francs les cent bottes; les Poireaux, 30 à 50 francs les cent bottes.

La commission d'enquête du Conseil municipal de Paris avait, on se le rappelle, demandé que des prix maxima fussent établis pour les denrées, notamment les légumes, vendues aux soldats, parce que c'étaient ces prix là qui réglaient les cours dans le pays. Le général Franchet d'Espèrey, commandant d'armée, a invité les marchands à s'en tenir à un bénéfice honnête, sans quoi il se verrait dans l'obligation de prendre des mesures de rigueur.

LES PERTES DE L'HORTICULTURE ALLEMANDE. — La dernière liste des tués publiée par le *Möllers Gartner Zeitung* ne renferme pas moins de 26 noms d'horticulteurs allemands tombés au champ de bataille.

TRANSPORT DES FRUITS EN ANGLETERRE.

Un avis officiel récemment publié annonce qu'en égard aux réquisitions de matériel roulant faites par les autorités militaires, les compagnies de

chemin de fer anglais peuvent se trouver dans l'impossibilité d'assurer le transport immédiat de toutes les Pommes et Poires de la récolte. Conséquemment, les producteurs sont invités à n'expédier actuellement qu'une partie de leur stock et à faire des dépôts pour le reste. Les indications relatives à l'établissement de ces dépôts sont fournies, sur demande, par le Board of Agriculture.

LES FORÊTS DOMANIALES EN BELGIQUE.

Nous avons rapporté que des Uhlans surveillaient les forêts belges pour les protéger contre les déprédations commises par les maraudeurs. On signale maintenant, qu'ailleurs, les Allemands abattent eux-mêmes des forêts, notamment aux environs de Bruges. Dans la banlieue de Gand, entre autres à Somergem, centre important pour la culture de l'Azalee, ils coupent les beaux arbres et les transportent dans une direction inconnue.

COMMERCE HORTICOLE AVEC L'ENNEMI.

L'*Horticulture française* signale que des horticulteurs néerlandais semblent servir d'intermédiaires aux producteurs de Mugnets d'Allemagne pour écouler leur marchandise en pays allié. La correspondance publiée est assez suggestive. Notre confrère appelle l'attention des horticulteurs français sur les peines auxquelles s'exposent ceux qui achètent ces Mugnets disant hollandais. En Angleterre des agents auraient offert des griffes qu'ils avaient, sans la moindre difficulté, être d'origine allemande.

Dans les Bouches du Rhône, à Saint Remy en Provence, dix marchands grainiers ont été arrêtés parce qu'ils continuaient leur trafic avec l'ennemi. L'attention du parquet avait été fixée sur les quantités énormes de graines qui étaient expédiées en Suisse, d'où elles passaient en Allemagne. Les intéressés prétendent avoir agi de bonne foi.

DEPÔTS FRIGORIFIQUES POUR RHIZOMES ET BULBES.

L'Allemagne ayant pratiquement le monopole de l'approvisionnement des Mugnets et autres plantes à rhizome ou à bulbe, destinées à la production hors saison de fleurs, le Ministre de l'Agriculture de France a décidé de faire étudier par la commission technique des applications du froid à la conservation des produits agricoles, la question de l'installation d'établissements frigorifiques pour ces plantes.

KORT OVERZICHT VOOR DE VLAMINGEN.

De handel in Bananen heeft in Engeland een groote uitbreiding genomen. Voorheen kwam die vrucht uit de Canarische Eilanden; in de laatste jaren heeft men zich echter in tropische gewesten, waar ze vroeger slechts tot voeding der plaatselijke bevolking diende, op de doelmatige teelt toegelegd. Jamaika en Midden-Amerika leveren thans miljoenen trossen.

De Canarische Bananen zijn smakelijker en komen wel verpakt toe. De Amerikaanse worden los geladen op de schepen die uitsluitend tot haar vervoer dienen en bijzonder aangepaste inrichtingen hebben. Door de Engelsche regering werd vroeger eene toelage van over tien miljoen frank verleend om de teelt en den handel op Jamaika uit te breiden.

In Frankrijk wordt beweerd dat van Holland, Deutsche meibloemen aangehouden worden. In Parijs werd de vraag gesteld of geene koelkelders konden opgericht worden om die Deutsche ijsplanten buiten te houden.

Graaf de Hemptinne die te Gent door de Duitschers voor den kop werd geschoten, is de bekende Orchidee-liefhebber.

GENTIANA ORNATA VAR. VEITCHII.

This autumn-flowering Gentian was finely shown by Mr. Amos Perry, under the name of *G. ornata*, at the meeting of the Royal Horticultural Society on October 12, and the Floral Committee granted it an Award of Merit. On August 31, 1909, the same plant received an Award of Merit, also under the name of *G. ornata*, when shown by Messrs. Veitch and Sons. The latter plant was subsequently described as a new species in *Gard. Chron.* (1909, September 11, p. 178) under the name of *G. Veitchiorum* by Dr. Hemsley, who gave the history of its collection by Wilson in Western China.

G. ornata is found both in the Himalayas and in Western China, and on looking over the dried material from both regions I have come to the conclusion that the Chinese form is not specifically distinct from the Himalayan type. On the whole, the Chinese specimens are more robust, with broader, more obtuse leaves, which led Franchet to call it *G. ornata* var. *obtusifolia*. As, however, the name *G. obtusifolia* belongs to a European species, it would be misleading to follow him. *G. ornata* var. *Veitchii* is suggested as most suitable, in that it retains the name of the introducer. W. I.



FIG. 100.—GENTIANA ORNATA VAR. VEITCHII. FLOWERS INTENSE BLUE, WITH LIGHT LONGITUDINAL BANDS ON THE OUTSIDE.

ERICA VAGANS ALBA.

Few of the summer-flowering *Ericas* are as attractive as the White Cornish Heath (*Erica vagans alba*). Here it has been in full flower since early August, and shows no sign of waning vigour, in spite of rough autumn weather. The flower-spikes are pure white, relieved by prominent dark anthers, and are charmingly set in the dense cushions of dark-green foliage. It is always neat and compact, and little exacting as to soil; most good garden soils seem to suit it, provided they are limeless, and the site is open and breezy. The winter-flowering *Erica mediterranea hybrida* already shows a sprinkling of blossom, and will be well out before *E. vagans alba* has finished for the season. The Cornish Heath is best propagated by division, either now or in January or February. Harold Evans, Llanishen, Cardiff.

THE MARKET FRUIT GARDEN.

OCTOBER, up to the 20th, inclusive, was almost entirely free from rain at my station, only 0.09 inch having been measured during that period. But with the 21st a rainy time set in, 3.27 inches being measured from that date up to the end of the month, making a total of 3.36 inches. This was above the average, even for October, which over long periods in London and at Rothamsted alike has proved to be the wettest month in the year. During the dry portion of the month the destruction of weeds in the orchards by hoeing was more satisfactory than it had been in any other period of the season.

FOUL ORCHARDS.

From an authority who has travelled through most of the principal districts in the country I learn that the orchards, as a rule, are more foul with weeds than he has ever seen them before. This is due in part to the scarcity of labour caused by the war, but partly, it may be suggested, to the great amount of time spent in spraying in a season of extraordinary aphid infestation. Those persons who recommend repeated sprayings for various kinds of insect and fungous attacks apparently fail to recognise the fact that time spent in spraying is time lost from

The case of spraying versus hoeing is rendered all the more annoying by the consideration of the fact that the time and money spent in spraying against the aphid and the Apple sucker were almost entirely wasted. Of course, many aphides were killed; but the great majority sheltered in curled leaves, and the pests multiplied so rapidly that a week after a spraying the trees were as densely infested as before. Experience has convinced me that the only time at which it is profitable to spray against an attack of the aphid is immediately after it has begun, and before the insects are protected in curled leaves. This statement applies only to the leaf-curling species, for the stem aphid, which does not curl the leaves, can be destroyed to a very great extent by spraying at any time after its appearance. As to Apple suckers, my conclusion from repeated and careful examinations, including numerical and recorded tests of proportions of trusses infested, is that the proportion killed by spraying is extremely small, the insects to a large extent being entrenched between the axils of the leaves and the fruit-bud stalks, and further protected beneath the globules of mucus which they secrete. The destruction of the two pests is aimed at in the same spraying; but unfortunately, comparatively few of the sucker eggs have hatched at the time when there is the best chance of killing aphides. At that time, moreover, those suckers which have been hatched are almost completely protected against spray fluid by the compact condition of the trusses of blossom buds.

CO-OPERATIVE RESEARCH AND EXPERIMENTS.

In the United States there is an admirable system of co-operative experiments among fruit-growers and neighbouring experiment stations which direct the trials. I am not sure that the system extends to research, which it might do with advantage. The like system might well be introduced in this country, to include research, as well as experiments in spraying, manuring, pruning and other subjects. One subject in which those who grow fruit on a large or small scale might join me in investigating is the origin of aphid attack upon Apples and Plums. Past investigations have convinced me that aphid attack in my orchards does not arise to any great extent from eggs deposited on the particular trees which become infested in any season. But confirmation of this conclusion on a large scale is needed to establish it as a fact. Entomologists assume the contrary conclusion. They tell us that aphid eggs are deposited during the late part of the autumn on the trees which will be infested with aphides in the next season, and that the stem-mothers hatch from these eggs, producing aphides, viviparously, which in their turn in succeeding generations multiply in the same manner. Now, I have never found on either Apples or Plums any considerable number of aphid eggs. Last winter, for example, a season preceding the worst infestation of aphides on Apple trees ever seen, I found only two or three shoots covered with the black and shiny eggs of the aphid while pruning many hundreds of trees. These eggs are such conspicuous objects that they can hardly escape the observation of the naked eye of a pruner, even if he is not looking for them; but I have often searched with a lens and failed to find them on Plum trees or on any considerable number of Apple trees. If numbers of observers should have the like experience, their evidence would go far towards proving conclusively that aphid infestation does not mainly arise from eggs on the trees of the particular orchards afterwards infested, and then entomologists might turn their attention towards the possible discovery of the actual source of the attacks. Any time after the end of the present month, up to the end of March, will be suitable for the examination of trees. A whole plantation of young trees would be the best subject,

hoeing, and that at the seasons of most rapid weed growth. Even in times of peace the supply of labour is not sufficient to allow of the employment of extra hands in hoeing sufficient to replace those engaged in spraying during considerable portions of the spring. After weeds have made rampant growth the cost of hoeing is doubled, and its efficiency is halved. It has been necessary to pay £1 an acre in some orchards in which the trees are too much grown out to allow of horse cultivation. Where the horse cultivator could be used between the rows of trees and bushes, by cultivating four or five times in the season, and hand-hoeing the rows after each operation with horses, a respectable state of cleanliness has been obtained. But the expense has been very much greater than it would have been if spraying had not delayed the cleansing work early in the season.

because small trees can be examined all over their branches.

SEQUEL OF THE APHIS ATTACK.

The pruning of young Apple trees which were densely infested with aphides in the summer will be pitiful work. The upper parts of the branches are twisted, stunted, and thickly covered with fruit-buds. If these are left entire the trees will be permanently dwarfed, and the only chance of getting fair growth will be to cut below them above a healthy wood bud, or even a dormant bud if no better can be found. This will defer any considerable fruiting for two or three years; but that is preferable to permanent dwarfing. Trees of James Grieve planted four years ago between Beauty of Bath and Bramley's Seedling, were models of good growth and shape before the aphis attack began; but now 3 to 4 feet will have to be cut off most of the leaders, leaving them only 6 to 12 inches long from the trunks. In another orchard some trees of Cox's Orange Pippin, Worcester Pearmain, Beauty of Bath and Allington Pippin, seven years from the planting, will require similar treatment, as they had not recovered from an attack in 1913, after which they were not pruned with sufficient severity. This applies only to portions of the trees of the varieties named. Older trees were less seriously attacked, and will not generally require severe pruning. The most remarkable recovery from aphis infestation in my orchards was made by some vigorous Allington Pippins, planted nine years ago. They were badly attacked, but recovered in an astonishing manner and produced a large crop of splendid Apples.

HOLES AND SPOTS IN APPLES.

In the packing of several varieties of Apples, including Cox's Orange Pippin, Newton Wonder, Blenheim Pippin and Bramley's Seedling, we found an extraordinary proportion of fruits with surface holes in them which do not look like the results of pecking by birds, and which are distinct from the well-known holes made by earwigs. Bramley's Seedling suffered least in this connection as in relation to other disfigurements. Possibly the holes were made by wasps. Various forms of spotting were also noticed in several varieties, including all but Blenheim Pippin among those named above, though least again on Bramley's Seedling. Scab spots are not referred to, as these were less common than they have been in many previous seasons. Some of the spots and some brown patches may be attributed to Apple fruit spot (*Cylindrosporium pomi*), while some very small spots, with tiny holes in their centres, are believed by certain growers and one specialist to have been caused by one of the capsid bugs. This form of injury, however, differs materially from what has been previously pointed out to me as capsid damage.

DISTORTION EXPLAINED.

In reference to the statement made about distorted Lord Derby Apples last month (see p. 227), Mr. George Bunyard wrote to me to suggest that examination of the interiors of the misshapen fruits would probably disclose undeveloped carpels, and this was found to be the case. There were only rudiments of carpels, devoid of pips in the worst specimens. Obviously, then, the blossoms had not been pollinated. Lord Derby, I believe, is classed among the self-pollinators; but possibly it is all the better for help from another variety. Now there are only two rows of Lord Derby Apples in the middle of a Plum field, and this year no other Apple grew near them. Previously, when Lord Derby bore perfect crops, there had been two rows of Duchess of Oldenberg alongside the former variety; but they were cut back and top-grafted last spring. Possibly, then, the lack of the complete pollination of a profuse show of blossom may be attributed to the change made. *A Southern Grower.*

THE "EYE-ROT" OF THE APPLE.

DURING the past season a fungous disease causing a rot of the Apple when growing on the tree has been sent to us from growers in three different districts. The disease has not been seen by us previously, and is apparently new. The general appearance of the disease is a "rot" commencing at the "eye" of the Apple, and gradually extending until a large portion is destroyed. The pustules of a species of *Fusarium* are invariably present scattered over the diseased area.

The first examples we received were in July last, from a fruit-grower in Sussex, who thought

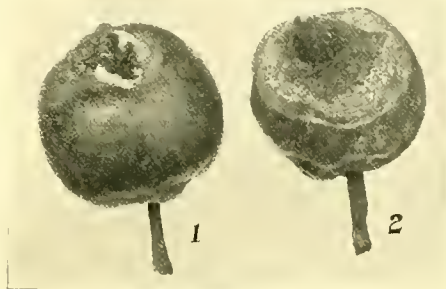


FIG. 101.—EYE-ROT OF APPLE.

1, Infection of fruit around the eye; 2, later stage.

the disease was an unusual form of "brown rot." The first sign of the disease appeared round the "eye." An illustration of one of the attacked Apples is shown in 1, fig. 101. The disease extended gradually, at about the rate of $\frac{1}{8}$ inch in four days, while the Apples were growing on the tree, until from $\frac{1}{4}$ to $\frac{1}{2}$ of the Apple was affected (2, fig. 101). Over the diseased area the pustules of the fungus, dull white to yellowish in colour, appeared in large numbers. These can be well seen in the photograph of a diseased Apple (magnified) shown in fig. 102.

As mentioned above, the disease invariably starts at the "eye"; whether some injury at

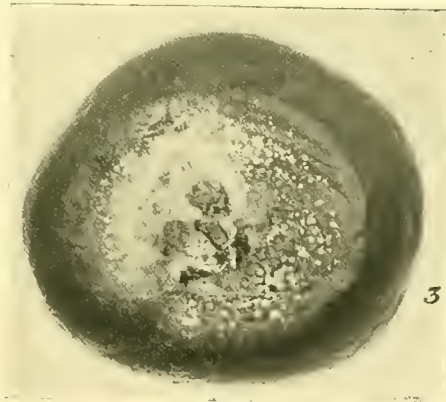


FIG. 102.—EYE-ROT OF APPLE.

3, Diseased fruit showing the pustules of the Fungus (*Fusarium* sp.) of "Eye-Rot."

this spot precedes the attack by the fungus is not known, but no visible wound was observable in these examples. It is possible, of course, that minute punctures by some insect may have occurred; the Apple trees of which the fruit was attacked were densely infested with aphides. The variety chiefly affected was Worcester Pearmain; a few examples were noticed on Cox's Orange Pippin, and one case occurred on Queen.

Exactly similar examples of the disease were found in August, on Apples growing on the tree, in a garden at Wye.

The third case was reported to us in September by a grower in Devonshire, who wrote:—"I send you some Apples affected with a rot in the eye; at first I thought it was caused by the Codlin moth, but on examining can find no trace of the larva. The variety attacked is Tower of Glammis, and the disease causes the fruit to fall in great quantity; Loddingtons growing in the same garden do not appear to be affected. I think quite 15 per cent. of the Tower of Glammis are diseased in this way." In a later communication, accompanied by further specimens, the following information was supplied:—"I do not think the affected Apples had received any previous injury."

The following characters were observed on a close examination of the diseased Apples. The diseased areas on the young Apples obtained from Sussex in July bore closely aggregated pustules with very numerous conidia. The conidia are cylindrical, with rounded ends, usually slightly curved, and septate. The septa in the great majority of cases are 3-5 in number, the 5-septate conidia being of very frequent occurrence. The dimensions vary considerably, the average size being about $50 \times 6 \mu$, but conidia measuring from $25 \times 5 \mu$ to $70 \times 7 \mu$ were met with. These conidia in size, shape and septation resemble those of the *Fusarium* which is the "summer stage" of *Nectria ditissima*, the fungus producing "canker" in Apple trees. Slight differences, however, in their mode of growth in pure cultures on agar lead us to suspect that the two forms are distinct from one another. (In connection with the present disease it is desirable to record the fact here that one of us gathered, some years ago, dried-up young Apples from a tree which bore on them very numerous perithecia of a *Nectria*, very similar to, if not identical with, those of *N. ditissima*.)

The Apples received from Devonshire in September showed a similar rot round the "eye," but in contrast to the examples described above, the fungous pustules were but ill-developed—one of the Apples bore only two pustules (with conidia as described before), while the other when received showed no trace of fructification, but after being kept for some time in a damp chamber pustules developed, and though more scattered than those observed on the younger Apples, the conidia were similar.

Of the examples obtained from a garden in Wye, one Apple, which bore typical "eye-rot," was found when cut across to have a hollow core lined with white mycelium bearing curved pointed sickle-shaped conidia. These conidia were smaller than those found on the external pustules round the eye, being usually about $30 \times 4 \mu$, and having but three septa. The conidia were not very numerous; those observed varied from $12 \times 3 \mu$ (conidium with one septum) to $36 \times 4 \mu$ (with four septa). A *Fusarium* found associated with a "core-rot" of the Apple has been found on the Continent, and described as *F. putrefaciens*, and the form found at Wye, as regards the size and shape of its conidia, conforms to the description given of that species.

With regard to the control of the "eye-rot," which, if it becomes general, will be a serious disease, advice as to the best preventive measures cannot be given until researches have been made into the life-history of the *Fusarium* associated with it. It is obvious, however, that it will be advisable for the grower, when the disease first appears, to pick off and burn the affected Apples, and to keep the trees, by the use of insecticides, free from all insects likely to puncture the fruit.

The writers will be glad to hear from any growers who have noticed the above disease, and especially to receive examples of Apples from the store-room rotting in the manner described above. *F. S. Salmon and H. Wormald, Wye College, Kent.*

THE ROSARY.

ROSES AT BAGATELLE.

AN exhibition of Rose novelties will take place in the park at Bagatelle, Bois de Boulogne, in 1916-17, as in past years. New Roses will be sent to the committee by the raisers. The plants should, as far as possible, have been raised in pots, and several specimens—five at least—must be sent to the Rosary at Bagatelle before April 15. A notice must accompany the plants as to their origin and parentage, stating, if necessary, any special treatment required. A similar exhibition has been held at Bagatelle every year since 1907. Gold Medals are awarded for the most meritorious novelties, and certificates for those placed next on the lists.

The new plants will be put in the ground in the public rosary as soon as they reach Bagatelle. They will remain there until the month of October of the second year, so that the jury may be able to study, during two seasons, the flowering and quality of vegetation. The address to which specimens should be sent is:—Rosaie de Bagatelle au Bois de Boulogne, En gare de Neuilly-Porte-Maillot, Paris.

ACACIA SEEDLINGS.

MOST of us who have some knowledge of raising plants from seed are aware that some of the peculiar Australian species of Acacia develop one or more pinnate leaves immediately above the cotyledons, succeeding leaves passing gradually into the phyllodineous condition. Mr. R. H. Cambage, the honorary secretary of the Royal Society of New South Wales, is engaged on a systematic investigation of the genus as represented in Australia, beginning with the seedling state. The first part of the results of his experiments and studies has been issued. He finds that the usual sequence in the development of the leaves is that the cotyledons are succeeded by one simply pinnate leaf, and this is followed by a varying number of alternate abruptly bipinnate leaves with stalks gradually becoming more dilated. This order of development was observed in about 400 seedlings, belonging to some sixty species; but in four species seventy examples produced an opposite pair of pinnate leaves, and in every case this pair has been succeeded by a bipinnate leaf. The author gives a list of fifty species which develop, with rare exceptions, only one pinnate leaf. In order to hasten the germination of the seeds employed, these were placed in boiling water and left for about two hours. Seeds of the very widely spread Acacia Farnesiana were kept in sea-water for three months, then placed in boiling water before sowing. After three months the seeds were taken up and immersed again in boiling water, then sown again, and at once germinated. Five plates of drawings illustrate this preliminary paper. W. B. H.

PLANT NOTE.

ANEMONE GEANTE DES BLANCHES.

FOR many years the old variety alba (Honorine Joubert) was *facile princeps* amongst the various forms of *Anemone japonica*, at least in the white-flowered section. Now it must give place to *Géante des Blancs*, whose creamy-white, undulating flowers are of greater substance, and the orange stamens more pronounced. The whole plant is more stately, the leaves and stems showing sturdy vigour without undue stiffness—one of the most striking features of the autumn garden. The variety Queen Charlotte is a good pink companion for it. E.



PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

FLOWER FORCING.—The season has arrived when much forethought and energetic management must be exercised by the grower to obtain large quantities of cut flowers regularly. It is necessary to look well ahead and make timely provision for probable requirements. At this early season it rarely happens that forced plants are a great success even with the best management, therefore it is wise to grow rather more than are likely to be required. Endeavour, without waste, to keep up an unbroken supply by retarding or accelerating the plants as circumstances require. In the meantime, plants of the earliest batch of Roman Hyacinths and Paper White Narcissi should be examined and removed from the plunging material when sufficiently rooted. If the leaves are much advanced in growth, accustom the plants gradually to the light, and, after a few days, if blooms are required very early, they may be placed in the forcing house. If flowers are not required very early the plants should be placed in a cool house or pit close to the roof-glass. If these bulbs are grown in pots, the flower-spikes must be supported at an early stage. Early Tulips will follow Roman Hyacinths, but these plants should not be hurried unless the blooms are wanted on some early date. Of shrubs, the Lilac is one of the best subjects for early forcing. In many places a stock of Lilacs is grown specially for the purpose, being planted out or grown on for lifting and forcing. Lift the plants with a good ball of roots and pot them; they should remain out-of-doors until the leaves have fallen, as they force best after they have been well frosted. Besides Lilacs, Spiraeas, Ghent Azaleas, *Rhododendron sinensis* (*Azalea mollis*), Forsythias, *Diervillas*, species of *Prunus*, *Laburnums* and *Ceanothuses* should be prepared for forcing shortly. After potting the plants plunge them in a bed of ashes, and place batches in the forcing house as required. Secure a plentiful supply of Lily-of-the-Valley, choosing until the turn of the year retarded crowns, but afterwards home-grown crowns may be forced. Start these plants in the dark, and in a bed of plunging material, in which the roots will be uniformly moist. Gradually inure the plants to the light when the flower-spikes are 4 to 5 inches high.

SALVIA.—Autumn-blooming *Salvias* will soon be at their best. While the flowers are opening and when fully expanded the conditions must not be cold or damp; on the contrary, do not employ more warmth than is necessary to maintain a free circulation of sweet air, and keep the atmosphere dry, as either extreme will shorten the duration of flowering. These plants are mostly strong, vigorous growers, and fill their pots with roots to such an extent that the soil is soon exhausted, however rich it may have been at the start. Therefore it is necessary to feed the roots with manure water. When the roots are starved the lower leaves soon decay, and spoil the appearance of the plants. Allow sufficient room between the plants for the light to reach them on all sides.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

PRUNING.—The work of pruning fruit trees of all kinds, with the exception of Figs and Peaches, may be commenced this month. It is highly important in large gardens to commence winter pruning early. Where there is much pruning to be done standard trees may be dealt with first, for the wood of these is sufficiently ripened. By the time the standards are finished, hush, espaliers, and afterwards wall trees, may be attended to. Raspberries may be pruned and the canes tied, but the trimming of both Goose-

berries and Currants may be deferred for a time; in fact, any date until the end of February is suitable for these, provided the work is done during mild weather.

PLANTING.—All kinds of fruit trees may be planted now in fine weather. Gooseberries are always in request, and, as with Currants, it always repays to top-dress the roots with rich manure each autumn, allowing the litter to remain on the surface until early spring, when, if deemed advisable, it may be lightly forked into the ground. Both these kinds of bush fruits should be planted 5 feet to 6 feet apart each way, and for preference the rows should run north and south. Black Currants will thrive in almost any situation. A north aspect is the most suitable for obtaining late Black Currants, and in point of both flavour and size of berry the fruit on bushes in a north aspect is equal to that from those in warmer positions. The following is a select list of varieties:—*Gooseberries*: (Red) Flixtonia, Goliath, Lancashire Lad, London, Warrington, Whinham's Industry; (Yellow) Golden Gem, Gunner, Langley Beauty, Leveller, Leviathan, Trumpeter; (Green) Early Kent, Fearless, General, Keepsake, Stockwell, Telegraph; (White) Bright Venus, Champagne, King of Trumps, Langley Gage, Queen of Trumps and Whitesmith. *Currants*: (Red) Fay's Prolific, Comet and Magnum Bonum; (White) Champion, and Versailles; (Black) Boskoop Giant, Lee's Prolific and Black Champion.

GENERAL REMARKS.—Provided the ground is in good working order, plantations of Strawberries may be made in open weather, but the work should be completed as soon as possible. Stir the soil in the established beds with the hoe, not only to destroy weeds but also to allow the air to enter. Newly-planted wall trees must not be nailed or tied permanently in position at first, as the soil usually sinks after planting. A few loose ties will suffice to keep the trees in position until the soil becomes consolidated, when the tying or nailing proper may be done.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

BRASSAVOLA.—The distinct *B. Digbyana* and *B. glauca* readily intercross with *Cattleyas* and other genera, but *B. cucullata*, *B. nodosa* and *B. acaulis* are also of interest, although the flowers are smaller and less showy. The plants will grow well in the *Cattleya* house, and may be planted on rafts or in Teak-wood baskets; a large quantity of soil is not required. The rooting medium should consist of Sphagnum-moss and *Osmunda*-fibre in equal parts. When the plants are in growth they must be given copious supplies of water, and may be sprayed freely overhead whenever the weather is bright. When the plants are at rest sufficient water should be given to prevent the long, succulent leaves from shrivelling.

STENOGLOTTIS.—This terrestrial South African Orchid requires cool treatment throughout the year. As the flowering stage passes root-waterings should be gradually reduced until the leaves die off, when the plants must be kept fairly dry until growth begins afresh. The tuberous roots should then be repotted in pans filled with fibrous loam and leaf-mould, and kept well supplied with water during the growing season. There are two species in cultivation, *S. fimbriata* and *S. longifolia*. Although not showy, they make a pleasing variety in the cool or Odontoglossum house.

VANDA.—*Vandas* are usually repotted in the spring, but it is advisable to examine plants of *V. suavis* section at this season of the year to ascertain if any would be benefited by repotting. By affording fresh rooting material now the plants are not so likely to lose their bottom leaves as if the work is deferred until the spring, provided the roots are watered judiciously. In the autumn the weather is cool and moist, therefore the conditions in the houses can be so regulated that the plants will soon become re-established without any detrimental results. Moreover, the plants root freely at this stage. *Vandas* and their allies should never be repotted unless they have become leafless at the lower part of the

stem, and those with leaves down to the pot may be top-dressed whenever the soil is exhausted. Having selected a specimen for repotting, sever the stem immediately below a few roots, so that when the operation is completed the foliage will be on a level with the rim of the receptacle. Take care not to injure the roots. Place a few broken potsherds in the bottom of the pot, and after the plant is placed in position add more crocks, and finally a layer of Sphagnum-moss and Osmunda fibre. Make the compost fairly firm, and secure each stem to a stake. Newly potted plants may be arranged together in a shady part of the Cattleya division or in a house with a similar temperature; keep their surroundings moist. If the Sphagnum-moss is kept damp by means of a sprayer or fine-rosed watering-pot, this will be all the moisture needed. All Vandas should be examined for insect pests, and especially the small, brown scale, which sometimes infests the leaves. The scales may be destroyed by sponging with a weak insecticide.

THUNIA.—The various Thunias are losing their leaves, and water is not required by the roots until the spring. The plants should be placed in a cool, dry situation.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

CANNA, SALVIA PATENS and LOBELIA CARDINALIS.—Lift Cannas and place the roots in boxes filled with dry soil. They may be wintered safely in a frost-proof shed if space in the greenhouses is limited. The roots of *Salvia patens*, which are not unlike small *Dahlia* tubers, should also be lifted and boxed in dry soil or coal ashes; a frame provides suitable winter quarters for these plants. In mild localities *Lobelia cardinalis* and its varieties are sometimes treated as hardy perennials, being left in the ground all the winter, and each plant covered with a small mound of coal ashes as a protection from frost and heavy rains. It is generally safer, however, to lift the plants, box them in soil, and store them in a cold frame during winter.

EUCOMIS PUNCTATA.—*Eucomis punctata* is well suited for growing in warm, well-drained borders. The bulbs take a few years to become thoroughly established, after which they increase and flower freely. The tall spikes of sweetly-scented flowers—now just past their best—are very attractive. The stock may be increased by detaching the offsets now, potting them and placing them in a cold frame, to be planted out next spring. Large bulbs may be planted now in rich, well-drained, sandy loam. Slight protection from excessive wet and frost is necessary; a few leaves, litter or dried Bracken Fern will answer the purpose.

TRANSPLANTING SHRUBS.—The work of transplanting evergreen trees and shrubs may be continued for several weeks, with, perhaps, little risk; though should the winter be a severe one, those planted early will probably not feel the effects of root disturbance so much as those moved later. Deciduous kinds may be planted in favourable weather all through the winter. The work, however, should be done with all speed, as there is a great advantage in early autumn planting, for the roots will become partially re-established before the winter. The advantage of autumn over winter or spring planting is that, should a dry summer follow, there will be less labour in watering, and, in view of the scarcity of labour, it is wise to look ahead and be prepared, as far as possible, for eventualities. Recent rains have done good, but the subsoil is still very dry. In transplanting trees with a large mass of soil attached to the roots, it is advisable thoroughly to soak the subsoil, after the stations are prepared, some little time previous to planting. If grass clippings from the mowing machines have been stored during the summer in an out-of-the-way corner, these will have decayed, and a layer placed in the bottom of the hole will be helpful. We use a large amount of grass clippings during the planting season, and find it invaluable for shrubs, trees and climbing Roses.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

LATE "MUSCAT" GRAPES.—If the berries of late Muscat of Alexandria Grapes are fully ripe, and it is desirable that the bunches should remain on the vines, very careful attention is necessary to keep them in good condition. It is essential not to employ too much fire-heat, which would cause the berries to shrivel, but dampness must be guarded against, for this would cause them to decay at the stalk, which is the greater evil. To prevent damp, other subjects in pots should be kept out of the houses, and fallen leaves collected each day. A little warmth from the hot-water pipes with ventilation on fine days will generally suffice to keep the berries in good condition. The temperature should not exceed 50° by night. This degree of warmth should not be maintained rigidly, for the temperature may vary a little in accordance with the weather. Thin-skinned Grapes of this type should, as a rule, be cut and placed in the Grape-room by the end of November, taking care to have as much wood with each bunch as can conveniently be spared from the vine.

PINES.—The majority of the plants having matured their growth, the atmosphere should be kept rather dry; as a rule the plants will receive sufficient moisture from the fermenting material to keep the roots in a healthy condition. From now until March the plants should be rested by allowing the temperature to gradually decrease to 60° by night. The temperature may vary slightly according to the weather; the bottom heat need not exceed 75°.

CUCUMBERS.—To maintain a supply of Cucumbers in winter much care is needed and a suitable house. During the dull, sunless days of November and December the temperature must be regulated carefully. A night temperature of from 60° to 65°, according to the condition out-of-doors, should be maintained. Each plant should carry only a few fruits, and they should be cut when quite small. Water the roots with extra care, and always use tepid water. Guard against overcrowding the shoots, as this would result in the fruits failing to set, and also damping of the leaves; reduce considerably the amount of atmospheric moisture. The roots should be lightly top-dressed when they appear on the surface.

TOMATOS.—Make a small sowing of Tomatos to obtain plants for fruiting next spring. Sow thinly and evenly in shallow pans, and cover the pans with a square of glass. The compost should consist of a mixture of sifted loam, leaf-mould and sand. As soon as the seedlings appear place the pans as near the roof-glass as is consistent with safety, and pot them singly as soon as they are ready for transplantation. Aim at securing plants with sturdy, short-jointed growth from the beginning.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

ASPARAGUS.—If forced Asparagus is required at Christmas the material for the hot-beds should be collected and prepared at once. Good Asparagus may be obtained within three weeks from the time the roots are introduced to the forcing pit, but better results follow if a little more time is allowed for the crop to develop. The bed may consist mainly of Oak leaves, which should be placed together now and allowed to ferment so that they may be turned several times before the bed is prepared. A deep, slightly-heated pit is the best place for forcing, as it is necessary to employ a little fire-heat in times of severe frosts. When the bed has been made and the thermometer stands at 80° with no danger of rising, spread 2 inches of decayed manure over the surface and lightly cover it with sifted leaf-mould. Lift the roots carefully and place them closely together. Cover the stools to the depth of 1 inch or more with sifted leaf-mould, which should be carefully watered in amongst the roots. The temperature of the water should be about 75°. In a few days numerous young roots will take possession of the manure, which

will do much to increase the quality of the produce. When the young shoots are pushing forth place sifted leaf-mould over the bed to the depth of 4 inches. At this stage see that the temperature of the bed does not become too high.

POTATOS.—Tubers which were lifted a month ago and placed in temporary stores should be examined carefully and stored for the winter. Seed tubers for next season may be selected and laid singly on shelves in a frost-proof shed, for they must be kept as cool as possible without subjecting them to danger from frost.

BROCCOLI.—It is necessary at this season to examine early Broccoli two or three times a week in order to cover the curds, which are easily injured by frost. This may be done now by bending some of the leaves over the flower, but as time advances a more substantial protection will be necessary. At Frogmore all the plants of Early Broccoli are heeled over early in November, two or three rows in one trench. The plants are carefully lifted with a good ball of soil and placed in a trench of sufficient depth to cover several inches of the stem. By this means the plants are easily protected from severe frosts, clean mats and dry Fern being used for the purpose.

TOMATOS.—Young plants intended for fruiting next spring should be ready for shifting into 4-inch pots. The soil may consist of a mixture of three parts turfy loam and one part leaf-mould, and should be made moderately firm. The pots must be clean and crocked carefully. After potting them stand the plants in a heated pit close to the roof-glass. A temperature of 55° to 60° is suitable in winter. Plants which are ripening their fruits require careful treatment for the remainder of the season. Water the roots carefully and allow a little more freedom of growth in order to promote healthy root action. Ventilate the house freely in favourable weather, and never allow the atmosphere to become stagnant. The temperature should be 60°.

THE "FRENCH" GARDEN.

By P. AQUATAS.

NURSERY BEDS.—All seedlings for the spring crops should be transplanted by this date in frames or under cloches. Afford the plants ventilation in favourable weather. It would not be advisable to replace now any plants which have failed, as these late-set plants would be smothered by the early seedlings. Towards the end of the present month the best of the Cos Lettuces should be lifted, trimmed of all cotyledons and decayed leaves, and set afresh in a new bed, fourteen plants instead of thirty under each cloche. If this is done there will be a supply of strong, sturdy specimens suitable for early forcing. Cauliflowers raised in September last will have tendency to grow rank; the lights should be placed on bricks to establish a current of air. If this method is not sufficient to check exuberant growth the plants should be lifted and set deeper in the same place. Lettuce White Passion, All the Year Round, and Wauxhall's Defiance for planting in the open in the early spring should be raised from seed sown broadcast very thinly in cold frames, set in a sheltered position. Keep the lights closed until the plants are well through the soil, when ventilation may be given in moderation. This sowing should furnish strong plants by the end of March or early in April. Such plants are especially suitable for northern gardens, for they withstand late frost better than those raised from seed sown on a hot-bed late in January.

CHICORY WITLOOF.—The earliest batch of this salad should be prepared for forcing. Remove the leaves and trim the collar carefully by hand. Make a trench 3 feet 6 inches wide and 1 foot deep in a place accessible in all weathers. Set the roots in rows made 3 inches apart. When the roots are all planted place frames over the trench and fill up with soil to a depth of 10 inches over the roots. Keep the frames closed and dark by means of mats or similar material. The second batch may be lifted at any time, and, having broken the leaves roughly, allow the roots to remain exposed in the open for about a fortnight, when they should be forced similarly to the first batch.

EDITORIAL NOTICE.

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

Editors and Publisher. — Our Correspondents would oblige by sending answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, NOVEMBER 8—

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

TUESDAY, NOVEMBER 9—

Roy. Hort. Soc. Com. meet. (Lecture at 3 p.m. on "Useful Books for an Amateur Gardener's Library," by Mr. A. E. Bowles). Gloucestershire Root, Fruit and Grain Soc. Show, at the Shirehall, Gloucester.

THURSDAY, NOVEMBER 11—

National Chrys. Soc. Exhibition, at R.H.S. Hall, Westminster (2 days). B.G.A. (Watford Branch) meet. Nottingham Chrys. Show (3 days).

FRIDAY, NOVEMBER 12—

Bradford and Dist. Hort. Chrys. Show (2 days).

SATURDAY, NOVEMBER 13—

Burnley and Dist. Hort. Soc. Chrys. Show.

AVERAGE MEAN TEMPERATURE at Greenwich, 44.3°.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. Thursday, November 4 (10 a.m.); Bar. 29.8. Temp. 49°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY

AND FRIDAY—

Dutch Bulbs, by Protheroe & Morris, at 67 and 68, Cheapside, E.C., at 10.30.

MONDAY AND WEDNESDAY—

Rose Trees, Shrubs, Perennials and Bulbs, at Stevens' Auction Rooms, King Street, Covent Garden, at 12.30.

TUESDAY—

Nursery Stock, at The Common Nursery, Richmond, by Protheroe & Morris, at 12.

WEDNESDAY—

Nursery Stock at Wood Lane Nursery, Isleworth, by Protheroe & Morris, at 12.
At 1 o'clock, Trade Sale of Bulbs, Japanese Lilliums at 3, Palms and Plants at 4, by Protheroe & Morris.

THURSDAY—

Roses, by Protheroe & Morris, 67 and 68, Cheapside, at 1.

Light and the Life of Plants.

THE importance of light to the well-being of plants is thoroughly understood by gardeners. Daily experience shows them not only that plants must be exposed to light, but also that if the light which falls on the plant be below a certain intensity growth is checked. The reason for these facts is also well understood by practical growers, who have learned that plants require light in order to carry on the manufacture of their food. Only when light falls on them are the green parts of the plant able to construct from the raw materials—water and carbon-dioxide, which they obtain from the soil and air—the sugar which serves as an actual food material for the plant. Whether light is also necessary for the manufacture of the more complex nitrogen-containing food-stuffs, which the plant has also to make for itself, is not so certain.

What is certain, however, is that the effects of light on plants are by no means confined to this essential part in food-manufacture. As is well known, light is one of the great directive agents of plants. By its aid plants, like animals, find their way. That is to say, each leaf and stem and branch contrives to take up its proper position as a result of movements of adjustment in reference to the direction of the light which falls on that member. By means of this response to light ordinary leaves come to stand at right angles to the direction in which light falls on them.

In yet more subtle ways light affects the fortunes of plants. For example, it is well known that if the light which a plant receives be of insufficient intensity, although vegetative growth may continue the plant may fail to flower. Although the fact is known the explanation is not. It was suggested long ago that light of a certain wave-length (ultra-violet light) plays an important part in stimulating the development of flowers. Recent discoveries of Professor Loeb suggest that this old view may contain something of the truth; for Loeb has shown that the eggs of certain animals (sea-urchins) begin to divide when exposed to ultra-violet light.

Another recent discovery which may perhaps lead to results of practical importance has reference to yet another effect of light on plant-growth. This discovery concerns respiration, the process whereby the plant (or animal), by bringing about the oxidation of its own substance—and particularly of the sugars which it has manufactured—obtains the energy whereby it does the work of living.

This process of respiration goes on unceasingly night and day in both plants and animals; but it has been known for some time that the rate of respiration, which is measured by the amount of carbon-dioxide given off, is definitely greater during the hours of sunlight than during darkness. The most recent investigations have yielded what at first sight are remarkable and puzzling results. Thus it has been found that even though a plant be kept in absolute darkness (and in a constant temperature) the amount of carbon-dioxide given off by a plant is greater during the day than during the night. The explanation of this curious fact is to be sought in the effect of sunlight on the oxygen of the air. This effect is termed ionisation, and it may be likened to that produced by a stonebreaker on a heap of stones. In un-ionised air the oxygen is composed of unbroken stones (molecules): when ionised, the oxygen consists of minuter particles which may be likened to the broken stones. These minuter particles of oxygen combine more readily with the oxidisable plant substances than do the unbroken molecules, and hence the rate of respiration is increased. It would appear not impossible that practical advantage may be taken of this fact, and that by supplying them at night with ionised air the rate of growth of plants may be increased. The experiment, so far

as we know, has not yet been tried, but if the facts described above are correct it is not impossible that "forcing by ionised air" may become a useful adjunct to the horticulture of the future.

Agriculture in War Time.

THE presidential address delivered by Mr. R. H. Rew to the Agricultural Section of the

British Association is of more than academic interest and deserves to be read by all interested in the land: and in these days who is not?

Mr. Rew shows that, when the war started, this country was in a peculiarly fortunate position as regards food supply; the Wheat harvest was upwards of 700,000 quarters above the 10 years' average, and the Potato crop showed a return of about $7\frac{1}{2}$ million tons as against a little more than the $6\frac{1}{2}$ million tons of the 10 years' average. Recruitment of agricultural labourers, of which class 15 per cent. joined the colours, scarcity of freight and railway transport difficulties, among other causes, led during the winter months to a rise—in some cases very considerable—of prices; and although the Wheat farmer gained, it is doubtful whether on the average his extra gains more than compensated him for losses in other directions. Wages increased from 1s. 6d. to 3s. per week, and the farmers of the country found themselves paying 2 million pounds more for labour than they paid at the outbreak of war.

Advice, official and unofficial, was showered upon the farmer, and it is pleasant to recognise with Mr. Rew that because, or in spite of it, the farmer set himself to increase the area under cereal cultivation. The measure of this increase is thus given by Mr. Rew: 22 per cent. Wheat-acreage, 7 per cent. Oats, and Potatoes maintained at the previous satisfactorily high level. In the face of these figures there will be general agreement with Mr. Rew's comment that British and Irish farmers have shown both patriotism and intelligence, and may fairly claim to have contributed their share to the national effort.

Mr. Rew emphasises once again the fact that British Agriculture and Horticulture make a more considerable contribution to our food supply than is generally supposed. His figures deserve to be noted carefully by all classes. They are:—

	U.K. %		British Empire overseas, %		Foreign countries, %
Wheat	19	...	39.3	...	41.7
Meat	57.9	...	10.7	...	31.4
Poultry	82.7	...	0.2	...	17.1
Eggs	67.6	...	0.1	...	32.3
Butter (including margarine)	25.1	...	13.3	...	61.6
Cheese	19.5	...	65.4	...	15.1
Milk (including cream)	95.4	...	0.0	...	4.6
Fruit	36.3	...	8.3	...	55.4
Vegetables	91.8	...	1.1	...	7.1

The only thoroughly unsatisfactory item in this list—at all events from the point of view of the horticulturists—is the

55.4 per cent. of foreign fruit imported. At the same time it has to be remembered that fruits, such as Bananas, which cannot be grown here, are included in the total. Wonderful indeed in view of the German "blockade" are the figures which Mr. Rew provides of the imports of food-stuffs in the year 1914-15 as compared with 1913-14. Perhaps our contemporaries of the Central Empires who receive and comment on this journal will note for the benefit of their readers wallowing vicariously in frightfulness the following:—

	1914-15 Thousands of cwt.s.	1913-14. Thousands of cwt.s.	Increase + or Decrease —, %
Wheat (in- cluding flour)	113,797	115,398	—1.39
Meat	15,868	18,026	—11.97
Bacon and Hams	7,452	5,975	+24.72
Cheese	2,766	2,386	+15.93
Butter (in- cluding margarine)	5,376	5,748	—6.47
Fruit	18,830	17,512	+7.53
Rice	9,573	4,840	+97.79
Sugar	35,029	38,356	—8.67

Surely no more eloquent tribute to the Navy could be penned than this sum of achievement in feeding the people of these islands.

STREPTOCARPUS TAYLORI.—This *Streptocarpus*, raised recently in the Royal Botanic Gardens, Kew, is a hybrid between *S. achimeniflora* alba ♀, and *S. denticulatus* ♂. The cross was made in September, 1914, and the seeds were sown in January of this year. The plants were grown in an intermediate temperature, and commenced to flower early in August. The seed-bearing parent was a good white-flowered variety of the well-known hybrid strain of greenhouse *Streptocarpus*; *S. denticulatus*, the pollen-bearing parent, is a species of the large-leaved section. The flowers of *P. denticulatus* are of a reddish-purple colour, about three-quarters of an inch across; and the branching inflorescence does not grow more than a foot high. Usually only a solitary leaf is produced, which varies from 9 inches to a foot in length, is from 4 inches to 6 inches broad, dark green, and wrinkled. The hybrid is very floriferous, producing from 6 to 10 inflorescences, each carrying from 10 to 20 flowers. The flower-spikes are from 12 inches to 15 inches high. Individually, the flowers are $1\frac{1}{4}$ inch in diameter, and the tube about 1 inch in length. In different plants the colour of the bloom varies a little, but it may be described as rosy-mauve with dark purplish markings in the throat. The pale green leaves number two, the largest attaining a length of 15 inches and 8 inches broad, while the smaller one is 5 inches long and 3 inches broad. *S. Taylora* promises to prove a valuable addition to the large number of hybrid *Streptocarpaceae* already in cultivation.

R.H.S. SCHOOL OF HORTICULTURE.—The Diploma of the Royal Horticultural Society's School of Horticulture at Wisley has been conferred upon the following students as a result of the examinations held at the completion of their two years' course during the present year. The number is smaller than usual, as many students left to join the Army, intending to complete their course after the end of the war:—MESSRS. L. C. EDWARDS, H. J. BARKER, E. A. GARRETT, A. T. RUDGE, A. WHITELY, W. H. STREETER, W. C. CROOM, F. H. V. WOOD. Prizes were also won by MESSRS. L. C. EDWARDS, H. J. BARKER, E. A. GARRETT, A. T. RUDGE. The "Nicholson Prize" for Observation was awarded to Mr. L. C. POWELL. Mr. EDWARDS'

essay on "The Flora of the Cotswolds" received high commendation. The examiners were Mr. JAMES HUDSON, V.M.H., Mr. JOHN FRASER, and Mr. F. J. CHITTENDEN.

FLOWER SHOW PROFITS FOR WAR FUNDS.—The net proceeds of the show and gift sale, held by the Urr Parish and Dalbeattie Horticultural Society, amounted to £79. This sum has now been allotted to Red Cross Societies, War Work Parties, and the Soldiers and Sailors' Families Association.

YORKSHIRE SHOW AND GALA.—The annual meeting of the guarantors and life members of the Grand Yorkshire Flower Show and Gala was held at Harker's Hotel, York, on the 22nd ult.,

over a year, but single demonstrations can also be attended.

SCOTTISH VETERANS' GARDEN CITY ASSOCIATION.—This Association, which has as its object the providing of villages throughout the country as homes for discharged soldiers, has achieved a considerable amount of success, and it is hoped to proceed shortly with the first portion of the scheme. At a meeting of the Ladies' Committee of the Association, held in Edinburgh on the 25th ult., satisfactory progress was reported. The consulting architect, Lord Dean of Guild HENRY, stated that the Association had an option over a portion of land of about three acres near Edinburgh, where it was proposed to erect between 30 and



[Photograph by E. J. Wallis.]

FIG. 103.—*STREPTOCARPUS TAYLORI* (*S. achimeniflora* alba ♀ × *S. denticulatus* ♂): COLOUR OF FLOWERS ROSY-MAUVE WITH PURPLISH MARKINGS IN THE THROAT.

Mr. G. POTTER-KIRBY being in the chair. It was announced that the war had prevented the holding of the show this year, and it was possible that the same reason might stand in the way of holding one in 1916; but provisional arrangements were made for holding the gala on June 14, 15 and 16, subject to the war being over by that time.

BELGIAN GARDEN AT CAMBRIDGE.—A Belgian garden has been started at Girton College, Cambridge, where Mr. RAYMOND GOFFIN, State Lecturer in Horticulture, will instruct in Belgian methods of growing fruit and vegetables. The course of instruction will normally extend

40 houses and some workshops. It is hoped to raise a sum of £50,000. In furtherance of the scheme a meeting of those interested was held in the City Hall, Perth, the same afternoon, when it was resolved to form a branch of the Association in Perth.

NATIONAL MEMORIALS TO THREE SCIENTISTS.—At the afternoon service in Westminster Abbey on the 1st inst., medallions were uncovered which have been erected in memory of Sir JOSEPH HOOKER, Lord LISTER, and Dr. RUSSEL WALLACE. The memorials have been placed on the wall of the north aisle of the choir, beneath the organ.

PARIS CHRYSANTHEMUM SHOW.—The usual autumn show on the Cours-la-Reine will not be held this year, but the National Horticultural Society of France has announced that an exhibition of Chrysanthemums and fruit will be held in the hall of the society, No. 84 rue de Grenelle, Paris, on November 6, 7 and 8. The profits of the show will be given to a fund for wounded soldiers.

SALE OF A BANANA IN AID OF RED CROSS FUNDS.—The *Daily Telegraph*, in its issue of the 2nd inst., records that at a gathering of sportsmen at dinner at the Clarendon Hotel, Christchurch, New Zealand, Mr. W. HAYES, sporting editor of the *Otago Witness*, picked up a Banana from a plate and suggested that it should be sold by auction in aid of the funds. Bids came rapidly, and the Banana was sold and resold until it had realised £31 11s., the skin being knocked down at £2. It was decided to divide the amount between the Wounded Soldiers' and the Red Cross Funds. The skin of the Banana was retained by Mr. Hayes as a memento.

WAR ITEMS.—Private GILBERT MICHIE, the fifth son of Mr. A. MICHIE, seedsman, of Alnwick, has been killed in action. He was serving in the 10th Cameronian Regiment (Scottish Rifles). Private MICHIE was only 21 years of age.

—The recent casualty lists include the name of Private EDWARD DASE, Wiltshire Regiment, recently foreman in the pleasure grounds at Compton Bassett Gardens, Wiltshire.

—His MAJESTY THE KING has sent a letter to Mr. RICHARD BRUCE, forester on the Lauderdale Estate, Lauder, to express his appreciation of the patriotic services of his family. Six of Mr. BRUCE's sons have joined the Army; two lost their lives during the retreat from Mons.

WOMEN GARDENERS AT PRESTON.—At the suggestion of the Lancashire Committee for the promotion of the employment of women in agriculture, the Preston authorities are giving facilities to women for a two months' course of training in gardening in Avenham Park, Moor Park and Haslam Park. It is expected that a number of women will take advantage of this opportunity of free tuition in gardening.

WART DISEASE OF POTATOS.—The Board of Agriculture and Fisheries recommends the following varieties of Potatos for planting on infected premises and infected areas in England and Wales for 1916:—A1, Conquest, Snowball, Abundance, King Albert, Leinster Wonder, The Duchess, Rob Roy, Great Scot, Southampton Wonder, Jeannie Deans, Kerr's Pink, Schoolmaster, Crofter, Culdees Castle, Provost, The Admiral, Irish Queen, Shamrock, St. Malo Kidney, King George V., Laird, Flourball, Golden Wonder, Langworthy, What's Wanted, Burnhouse Beauty, The Lochar and White City.

INCREASING THE SUGAR-CONTENT IN MAIZE.—It is claimed by E. HECKEL (*Comptes rend.*, 161, 1915, 338) that if the male inflorescences of the giant Serbian Maize are removed as soon as they have served for the fertilisation of the female flowers, the sugar-content of the plants is increased, and also, what is less readily credible, that the seed from plants so treated give rise to plants with a content of sugar higher than the normal.

COUNT JOSEPH DE HEMPTINNE.—The *Echo Belge* states that according to the *Belgisch Dagblad*, Count JOSEPH DE HEMPTINNE was executed at Ghent on Tuesday, the 26th ult. The execution of the Count, a member of a well-known Catholic family, was, it is stated, carried out with all haste, as the German authorities apparently feared the intervention of the Pope. Horticulturists in this country will be grieved to learn the cruel end of this kindly-disposed Belgian gentleman, whose company and hospitality at his pretty place at St. Denis-

Westrem, Ghent, many of them, and especially Orchidists, had enjoyed. Count JOSEPH DE HEMPTINNE, like other members of his family, was a great lover of Orchids. Many will remember the fine group of Orchids which he staged at the last Ghent Quinquennial Show, 1913, including the very large specimen of *Cymbidium Lowianum*, with thirty-six spikes, which had been in his collection for sixteen years. He was President of the Committee organising the continuation of the show on the same site, August 9-17, and again made a fine display of Orchids. He was a member of the Jury of the Royal International Exhibition, held in London in 1912, and acted as President of the Jury in the non-competitive classes of Orchids. No particulars of the charge made against Count DE HEMPTINNE have been published. It will be remembered that on a false charge earlier in the year Monsieur JULES HYE DE CROM, another friend of British horticulturists, barely escaped a similar fate only to die a few days after his release in consequence of the treatment to which he had been subjected.

PRIMULA OBCONICA.*—Professor BAYLEY BALFOUR's paper, the title of which is given below, was read so long ago as April, 1913, and separate copies were distributed towards the end of last year, so that the contents are not altogether unknown. But this paper is of great interest, both to the cultivator and the biologist. One object of the investigations was to discover a species of *Primula* having the floral properties of *P. obconica* without the objectionable, injurious hairs. Respecting this irritative element, Prof. BALFOUR says: "The irritation caused by *P. obconica* comes from a yellow substance, out of which monoclinic crystals separate, which issues from the hairs. . . . There is no question of an exhalation or of a microbe in the air." He also adds that washing the parts immediately after contact will dissolve the hurtful secretion and remove it; but once the itching has begun, zinc ointment with boracic acid, or some such palliative, must be used. The species or races described and figured by the author are *P. obconica*, *P. Listeri*, *P. australisteri*, *P. filipes*, *P. parva*, *P. ambita*, *P. Petitmengeni*, *P. Vilmoriniana*, *P. sinolisteri*, *P. begoniiformis*, *P. Bonatii*, *P. barbicalyx*, and *P. oreodoxa*, and these are all figured from photographs of type specimens preserved in various herbaria. This series is designated the "Obconico-Listeri" section of *Primula*, and *P. sinolisteri*, Balfour, is regarded as the form possessing the good qualities of *P. obconica* without its deleterious properties. *P. sinolisteri* has been published by different writers as *P. obconica* var. *glabrescens*, *P. Listeri* var. *glabrescens*, and *P. Listeri*.

STORAGE OF MANURE.—The problem of the storage and fermentation of manure has for long been a subject of discussion, pits and covered courts each having their advantages and disadvantages. A new system by Dr. GIUSEPPE BECCARI, of Florence, Italy, is described in a recent publication from the Imperial Institute of Agriculture, and consists in the storing of the manure in turret-covered courts. The court is a rectangular structure of masonry, divided internally into two compartments about 7 feet high. The floor is paved and provided with drains covered with perforated bricks, through which air passes upwards into the manure, while the liquid manure drips through into a tank. In the top of each compartment there is a trap-opening through which the manure is thrown. Between the two trap-openings a turret is situated, with the object of collecting and fixing the ammonia compounds evolved from the fermenting manure, which enter by the apertures. In the turret, shelves placed above each other and fixed

alternately to either side are charged with solid or liquid, alkaline or acid absorbents; these are collected from time to time through a door or other aperture in the turret, which has also openings at the top and bottom for the admission and escape of air. The manure is abundantly sprinkled every four or five days with liquid manure from the tank, and in forty-five to fifty days it is ready for use. Manure made in this way has been found to contain 0.54 to 0.89 per cent. of nitrogen, while manure made in the usual way is considered good when it contains 0.45 per cent. Besides this there is also the nitrogen fixed by the absorbents in the turret. From the hygienic point of view this system is superior to any other. It has been adopted in several parts of Tuscany, where the cost of erecting such a covered court sufficient for eight to ten head of cattle is about £26. The advantages of the system are (1) that of fermenting the manure in a closed space so that it attains immediately the high temperature of 158 to 167° F., evolving abundant ammonia and preventing the development and action of denitrifying bacteria and consequent loss of nitrogen; (2) that of collecting the volatile ammonia compounds, which are led into a special chamber (the turret), where they are transformed into stable ammonia salts or nitrates, by suitable absorbents, such as clayey earth, peat, charcoal, gypsum, acid superphosphates or an alkaline medium, and at the same time favour the development of numerous colonies of nitrifying bacteria.

THE GENUS EUCALYPTUS.—The twenty-third part of Mr. MAIDEN's *Critical Revision of the Genus Eucalyptus* deals with the closely allied species *E. robusta*, *E. botryoides*, and *E. saligna*; all described by Sir J. E. SMITH in 1797, and all valuable timber trees of Eastern Australia. From this publication we learn that one of the popular or hushmen's names of *E. saligna* is "blue gum," and this throughout a wide district in northern New South Wales. In southern localities this species is known as the "Woolly Butt," and there are herbarium specimens labelled "Grey Gum" and "White Gum." BENTHAM records the name "Blue Gum" from various collectors' notes on seven different species, not including *E. saligna*, and under *E. globulus* he gives it on the authority of J. D. HOOKER. Turning to MAIDEN's account of *E. globulus*, we find no special mention of the name "Blue Gum" under that species, yet in this country *E. globulus* is the only and true "Blue Gum," not only of cultivators, but also of gardening and botanical literature and reputable dictionaries, including MURRAY's *New English Dictionary*. But in his *Useful Native Plants of Australia* MAIDEN states that *E. globulus* is universally known as "Blue Gum."

PUBLICATIONS RECEIVED.—*Annals of the Missouri Botanical Garden*. Anniversary Proceedings. Vol. 11., Nos. 1 and 2. February-April, 1915. (St. Louis, Board of Trustees of the Miss. Bot. Garden.) \$3.00.—*Grain Screenings*. By John R. Dymond, B.A. (Published by the direction of the Hon. M. Burrell, Minister of Agriculture, Ottawa, Canada.) June, 1915.—*Report on the Poultry Industry in Wales*. Supplement to the *Journal of the Board of Agriculture*, October, 1915. (Published by the Board of Agriculture and Fisheries.) Price 4d., post free.—*Bulb Growing for Amateurs*. By H. H. Thomas. (London: Cassell & Co., Ltd., La Belle Sauvage, E.C.) Illustrated. Price 1s. net.—*The Greenhouse: Its Flowers and Management*. By H. H. Thomas. (London: Cassell & Co., Ltd., La Belle Sauvage, E.C.) Illustrated. Price 1s. net.—United States Department of Agriculture Bulletins:—No. 252: *Life History of the Codlin Moth in Maine*; No. 231: *Recent Studies of the Mexican Cotton Boll Weevil*; No. 251: *The Calosoma Beetle in New England*; No. 209: *Testing Grape Varieties in the Vinfiera Regions of the United States*; No. 284: *Fleas*.

* *Primula obconica* and its Microforms," by Professor Bayley Balfour. *Transactions of the Botanical Society of Edinburgh*, XXVI., pp. 301-344, plates xxi.-lvi., 1915 (issued separately November 30, 1914).

COLLERETTE SUNFLOWERS.

It was noticed in our Sunflower cultures a few years ago that certain plants which had a fasciated parent showed what looked like supernumerary rays, but these structures were extra-elongated lobes borne on the ray florets. It did not occur to us at the time that this odd variation, almost monstrosity, could have any horticultural significance, and no effort was made to develop a strain possessing it. There were, however, plants with the rays split at the ends, which were rather interesting and attractive. This year (1915), at Boulder, in a group of plants selected for colour, there appeared unexpectedly a row of a genuine "Collerette" type, in which the extra lobes of the ray florets were developed with fair regularity, and frequently turned inward. This occurred both in the chestnut and vinous colours. The illustration in fig. 104 shows one of each, the upper head being the vinous. In another plot we found a similar "Collerette," but with the growth and orange rays of the wild Sunflower.

We were led, for comparisons, to examine the Collerette Dahlia, the variety available being the original President Viger, the first of the Collerette Dahlias. The structure is essentially the same as in the Sunflower, only the extra lobes (two to four), borne on the bases of the disc-corollas, are more regular. Neither in the Dahlia nor the Sunflower are they connected in any way with the disc-florets. *T. D. A. and W. P. Cockerell, Boulder, Colorado, U.S.A.*

THE GENESIS OF NEW FORMS.

THE mode of origin of new forms of cultivated plants must always be a matter of absorbing interest to horticulturists. Probably even to-day it is for the general public a manifestation of some mysterious skill on the part of the gardener in realising, through a process of artificial selection, a fresh ideal which he had set out to perfect. Such a view is clearly the outcome of the doctrine of evolution as a gradual process which has been prevalent since the publication of Darwin's famous work. But the horticulturist knows better. Give him a pink Snapdragon and unlimited time, and ask him to make a deep red by a process of selection, of picking out and breeding from the deepest pinks each year, and he would most likely imply that no one but a fool would set about it in such a way. If he were an enlightened gardener he might go on to say that, paradoxical as it may sound, a much better chance of success was to be found in crossing the pink with a white. The cross would lead to a "breaking of the type," and it would be quite on the cards that the desired deep red might appear. The experiment might, or might not succeed, but in any case there would be an outside chance, whereas the selection method would certainly fail. Hybridisation, as every gardener knows, is the only method of raising new forms that is at present under man's control. So much is obvious from a casual perusal of any seedsman's catalogue. It is, however, a method of which the limitations are clearly defined. The new varieties that appear as the result of a cross are merely the expression of the various possible recombinations of factors by which the two parents differed from one another. To take a simple example—a red Bicolor Sweet Pea on a cream ground crossed with a white may give a red bicolor on a white ground. From this when selfed come four different classes, red on white, red on cream, white, and cream. In this F_2 generation have appeared two fresh classes, viz., red on white, and cream. The original parents differed in two factors from one another. The one had a factor for red dominant to non-red, and the other a factor for white dominant to cream. When both factors are pre-

sent the flower is red on white; when the white factor is absent it is red on cream; in the absence of the red factor alone it is white; and in the absence of both red and white factors it is cream. The novelties appearing in the F_2 generation after the cross are simply the result of the orderly redistribution of the two factors in which the original parents differed from one another. Where the factors in which the parents differ are more numerous the number of fresh classes making their appearance in the second generation after the cross is correspondingly greater.

On this view of the process of hybridisation, which is the one that recent work has led to, it is evident that such novelties as appear depend upon definite differences in the original parents. Did we know beforehand in how many factors they differed from one another, we should be in a position to predict the number of forms which could arise from the cross without more ado. Clearly this does not help us in the problem of how such differences arise in the first place.

buted to some spontaneous process of variation, possibly induced by alteration in cultural conditions, but certainly independent of the ordinary processes of hybridisation.

The nature of this spontaneous variation or mutation is the theme of a recent book by Gates on the *Oenotheras*.† Since the publication of de Vries' classic work on the mutation theory these plants have been recognised as of peculiar interest from this standpoint. Nearly 30 years ago the plant which de Vries termed *O. Lamarckiana* was discovered by him growing wild in Holland, and transferred to his experimental garden. De Vries found that it did not breed true, but continually threw a small proportion of several other and quite distinct forms. Of these forms he states that some bred true from their first appearance, while others, again, gave forms unlike themselves. Largely as the result of his experiments with this plant de Vries was led to formulate his ideas as to the way in which specifically new forms come into being. He considered that at periods separated by long



FIG. 104.—COLLERETTE SUNFLOWERS.

And unless these initial differences existed in the parents there could be no appearance of new forms by the ordinary process of recombination.

There is good evidence for the origin of new forms under cultivation which cannot be set down to ordinary redistribution of factors following upon a cross. The history of *Primula obconica* is an example of such a case. For the first ten years after it was introduced into Europe in 1880 no marked variation was observed. Then came definite variations, one after another. The dark eye, the grandiflora form, the fimbriated petal, the rose-cloured form, and the pure white, all appeared before 1900, while during the present century there have been put on the market the double-flowered form, the crimson, the blue, and others.* Though attempts have often been made to cross *P. obconica* with other species, there is no clear record of the attempt having succeeded. There is little doubt that the novelties which have appeared in *P. obconica* since its introduction must be attri-

intervals of time a species passes into an unstable condition. During such a mutation period it is continually giving off new forms, some of which may eventually survive to pass into a condition of stability and become new species, supplanting the original form from which they sprang. As species they will continue until they also in the fulness of time enter upon a mutating period, and themselves break up to form fresh species. With regard to the underlying processes in the protoplasm of the plant through which mutational changes come about, de Vries has developed an ingenious but highly speculative hypothesis—an extension of his earlier hypothesis of Intracellular Pangenesis.

The conclusions of de Vries have not passed unchallenged by biologists, more especially those who are engaged in what is termed Mendelian research. His critics have generally taken up the position that it has not yet been shown definitely that the ascertained laws of inheritance

* See A. W. Hill, *Journal of Genetics*, 1915.

† *The Mutation Factor in Evolution*, Macmillan & Co., 1915.

will not account for, at any rate, most of the phenomena exhibited by the *Oenotheras*. That some plants and animals cannot be got to breed true is now a sufficiently familiar fact, and capable of simple explanation. For this reason too much weight should not be attached to the peculiarity of *O. Lamarckiana* in continually throwing off forms unlike itself. Another feature of the *Oenotheras* is the high percentage of bad pollen shown by most of them. A large proportion of bad pollen is so commonly found in plants of hybrid origin that the frequency of its appearance in the *Oenotheras* lends colour to the suggestion of a hybrid origin for these forms. It is here that the main issue between de Vries and his critics lies. When *O. Lamarckiana* throws off the different forms unlike itself are we witnessing the birth of new varieties as de Vries claims, or is it simply a case of recombination of pre-existing factors leading to a mixed progeny on breeding from a heterozygous form? Gates is a supporter of the former alternative. He regards the appearances of these new forms, or mutations, to be closely connected with nuclear changes during the formation of the germ cells. The usual number of chromosomes in the nuclei of the cells of most *Oenotheras* is 14. Gates discovered some years ago that other numbers occur, and that in some cases the presence of an unusual number of chromosomes is correlated with the form of the plant. Thus *lata* and *semi-lata*, mutants from *Lamarckiana*, have 15 chromosomes, while *gigas*, another mutant, has 28 chromosomes. Nevertheless, the great majority of the mutants appear to have the normal number of 14 chromosomes; consequently, too much stress should not be laid upon the fact that a difference from the usual number may in certain cases be bound up with a difference in form.

In taking up the view that the different forms thrown by *O. Lamarckiana* are not due to a process of recombination of characters, Gates lays stress on the proportions in which they appear. These proportions, he says, fluctuate considerably, and do not fit in with the familiar Mendelian ratios. Hence the origin of these new varieties must depend upon some form of mutation which is quite distinct from and independent of the process of heredity. This argument has not the force that it would have had a few years ago when the study of Mendelian heredity was in its infancy. Then the recognised Mendelian ratios were few and simple; to-day many and much more complicated ratios have been proved by experimental analysis to be consistent with Mendelian schemes. In fact, present knowledge shows that a true breeding recessive may be produced in a number of proportions varying from less than 2 per cent. up to over 50 per cent., and it is likely that this range will ultimately be extended. The fact that a recessive form does not appear in the familiar 1 in 4 is not of itself evidence against the occurrence of the normal process of heredity.

Since the publication of Gates' book an interesting paper has appeared in Sweden by Heribert-Nilsson.* His experiments are chiefly concerned with the working out of the inheritance of the red colour in the foliage of certain *Oenotheras*, a feature characteristic of certain mutants. Like Gates, he found that the proportions in which the green-leaved recessives appeared varied considerably. Unlike Gates, however, he attempts to show that these various proportions are not incompatible with a Mendelian interpretation. He also made other experimental crosses involving the appearance of "mutants," and came to the conclusion that the appearance of these new forms is explicable as a process of recombination if it be assumed that the homozygous combinations are incapable of forming plants—a phenomenon already demonstrated in the case of yellow mice. Heribert-Nilsson's explanation is admittedly speculative, but it de-

serves careful consideration from those interested in the *Oenothera* problem. Further work, and a great deal of it, is necessary before it can be decided whether the remarkable phenomena witnessed in *Oenothera* fall into line with the knowledge gained from breeding work with other plants, or whether they are a thing apart, and hold the promise of a glimpse into the way in which new forms spring into being.

For that novelties do arise in this way there can be no question. While the majority are doubtless due to the re-shuffling of characters through hybridisation, this is no reason for supposing that such has been the way in which the new forms of *Primula obconica* were procured. Even more clear is the case of the Sweet Pea, a plant notoriously incapable of fertilisation with other species. Once the waved standard had appeared, hybridisation within the species played its part, and the new character was rapidly combined with the various existing colours of the *grandiflora* varieties. But what was it that brought about the first appearance of the waved standard? Certainly not conscious selection, and equally certainly not hybridisation. All we can say to-day is that it just turned up, no one knows how. Possibly it came through changed conditions, upsetting the internal equilibrium of the germ cells during their processes of division. But no answer can be given till a case has been found in which a controlled change in conditions produces a heritable effect which can be repeated at will. The problem is so difficult, yet so important, and evidence so hard to come by that one must conclude by expressing the hope that horticulturists who are fortunate enough to witness the coming of a new form will make careful note of the conditions associated with its advent. There is always the possibility that such knowledge may put the scientific worker on the track of fuller understanding, and of eventually controlling the production of new forms other than those due to the re-shuffling of characters brought about through hybridisation.

CONFESSIONS OF A NOVICE—VI.

I BELIEVE that I have discovered a means of distinguishing between those who love and those who affect to love gardens. Whether this charm of mine is infallibly potent I am not yet sure, but in those cases in which I have tried it, the test has given results as definite as those a chemist gets when he treats acids and alkalis with litmus. This touchstone of golden gardeners is the Conifer. Not a great and gnarled and ruddy-stemmed Scots Pine, which none can but admire, but some fair-sized *Abies* or *Cupressus*. To it you lead your visitor, of the sincerity of whose praises of your garden you wish to be assured, before taking him closer to your horticultural bosom. You ask him frankly "if he likes it?" The answer will betray him. Your summer-time gardener, for whom a garden is a source of cut flowers for the dinner-table or a place in which tennis courts and asparagus occur, will answer with unavailing discretion that "it is very nice, but rather gloomy." For such an one arrange at once a game of clock-golf or croquet, take him to the Strawberries, call for afternoon tea, do anything with him that civility allows—but do not unburden your garden soul to him. He is not one of us—not even a novice. But if the subject of your inquisition be in truth a gardener, that is, one for whom plants live and move and have their being all the seasons round, he will answer you with grave politeness—as one who fears for your reason but is too well-bred to reveal his fears—that he does indeed like that tree. For as you ask the question images sweep cinematographically across his mind, and he sees the dark green of the Fir or of the Cyprus, not, as now, a dull background to the pageant of summer, but a gallant figure in green in winter-time, at once a shining memory

of the year that is gone and a herald of that which is to come.

Strange is it that reality is but an illusion of childhood, and that when we are grown men we drape the realities so far as may be with the iridescent gossamer garments woven by memory from the thread of imagination. To the non-gardener plants are things; to us they are processes. For him they do not exist until they flower or fructify; for us they are, a joy and often a despair throughout their subtle lives. For him there is nothing to be known about them except their names; for us, after never so long a novitiate in their service, comes the recognition of how much there remains to know. I am told that for the artillery man there are but three kinds of trees—Firs, Oaks, and Poplars; nothing else exists for him, since every tree that grows has the habit of one or other of the three. I am in somewhat like case with the artilleryman, for though I may have a nodding acquaintance with more trees than he consents to recognise, my garden is not large enough to let me get to know them intimately by growing them. Here at last I reach the problem that vexes my inexperienced mind. This garden of mine contains many different trees, some of no mean size. It is enclosed on three sides by narrow groves of Larches, interspersed here and there with Scots Pine and Birches. Among them I have planted a few of brighter hue to break the monotony of their autumnal foxiness and to give colour when the Larches are bare—*Abies pungens glauca*, beautiful always in its white-grey-greenness, but most beautiful when making its new growth of palest pale green; the golden forms of Lawson's Cypress and of *Retinospora Crispis*, and *Cupressus macrocarpa*, which grows in my sandy soil at a prodigious rate; the glaucous form of *Cedrus atlantica*—as I think a truly admirable choice, which I owe to the friendly counsel of one wise on the subject of coniferous trees. But my troubles begin where the bordering groves end, for Larches and Birches invade my borders and shrubbery, with the consequence that my shrubs begin to wilt as the roots of the trees drain the ground dry of moisture, and the edging of *Nepleta Mussinii*, which should encircle the drive like a boa of grey fox about a shapely neck, becomes, where it enters the sphere of influence of the roots, as patchy as the boa which is moth-eaten.

For the sake of their dark, straight, upstanding stems and the spring-time greenness of their fresh leaves, I will not sacrifice the Larches, nor will I forgo the abiding loveliness of the Birches. Even in my unregenerate not-gardening days I so loved the sight of their ghostly stems, suggesting moonlight robbed by the day, that I always lost a hole on a certain golf links because my eye was distracted from the ball by twin weeping Birches standing in the fair-way to the hole. How whilst retaining these scattered and welcome invaders of the shrubbery may I persuade the soil to act hospitably to the Rhododendrons and the Cat-mint? If, as I incline to think, it is mainly a question of water supply, I may achieve success by taking out a couple of spits of the top soil—poor, heartless stuff as it is—and replacing it by a loam mixed with a little peat to increase its water-holding capacity. This I shall try unless some of my readers, out of their rich stores of kindness and knowledge, point a better way. Never was novice confronted with a knottier problem. I do not want a garden without trees, and cannot make one with them. If the trees were of kinds which throw deep shade—Oak and Beech, for example—I should be prepared to bow to the inevitable, but I am loth to believe that I must continue to be beaten by Larch and Birch, especially if, to expose the soil beneath them to light showers, I cut away the lowermost branches. Nevertheless, I am not over-confident, for I suspect that the Larch is a tree very avid of water, and I know that it sends its roots wandering far in the upper layers of the soil. A. N.

* *Die Spaltungserscheinungen der Oenothera Lamarckiana*, Lund, 1915.

PRIMULA SEPTEMLOBA.

PRIMULA SEPTEMLOBA, Franch. (see fig. 105), was introduced from China by Bees, Ltd., from seed collected by Mr. George Forrest in N.W. Yunnan in 1906. In its native Alps the plant favours shady and damp situations, occurring at altitudes of from about 9,000 to 11,000 feet in the forest and scrub clothing the side valleys of the Yunnan and Szechuan ranges. *P. septemloba* is a graceful plant with slender flower-scapes surrounded by clusters of bright-green leaves on slender stalks, and although not a large-flowered species is a charming member of the shade-bearing group of Primulas. The upper crinkled leaf surface is somewhat deeply furrowed by

inner surfaces, is, in the full-blown flower, about three-eighths of an inch across. In fruit the pedicels become stiff, and more or less erect, and a characteristic feature at this period is the campanulate calyx, with its stiff, divaricate teeth projecting well beyond the capsule. *Primula septemloba* resembles in habit the Himalayan *P. geraniifolia*, Hook fil., and also the Chinese species *P. heucherifolia*, Franch. The last is a smaller plant, but its flowers have a wider corolla mouth. All these are now in cultivation, and, with *P. oculata*, Duthie, also a Chinese form, *P. vaginata*, Watt, a Himalayan plant, and *P. jesoana*, Mig., a Japanese representative, constitute a very natural group of Primulas, all apparently being shade plants. *P. septemloba* appears to be quite hardy, and is not a difficult plant to grow.



FIG. 105.—*PRIMULA SEPTEMLOBA* GROWING WILD IN CHINA: FLOWERS REDDISH-PURPLE.

the veins. The more prominent of these diverge radially from the sinus of the deeply cordate base, and, as the specific name indicates, the more or less horizontally poised leaf lamina is segmented at the margin into seven distinct, obtuse, denticulate lobes. Both the upper and under surfaces of the leaf are clothed with soft hairs, and the long thin petiole is also densely clothed with glistening white hairs. The flower-scapes are from 7 to 14 inches high, and bear small clusters of reddish-purple, semi-pendulous, and slightly fragrant flowers. The pedicels and bracts are tinted, and the calyx also is reddish, the colouration being deeper on the teeth and sepaline ridges. The tubular corolla, reddish-purple in colour, is from half an inch to five-eighths of an inch long, and the mouth of the corolla limb, the lobes of which are for the most part concave on their

and the view, on a fine October day, from the rock garden is one worth going many miles to see.

QUERCUS COCCINEA.

AMONG the boldest of the many bright colours in the garden is that presented by a tree of this scarlet-leaved Oak, in the seven-acre field below the herbaceous borders. Although deciduous, *Q. coccinea* appears to hold its leaves well and gives a touch of flame to the grey and brown landscape.

Of the six cottages built for the garden staff, five, we are informed, are already occupied. The group has a snug look, and the occupants are beginning already to bring their gardens under cultivation. Among the recent acquisitions of the gardens is a small piggery, which has been built at the far (south) end of the vegetable garden. The ever-increasing shortage and deterioration in quality of manure are responsible for the venture, which, having regard to the large quantity of garden refuse available, should prove a source of economy.

HOME CORRESPONDENCE.

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

RHYTISMA ACERINUM.—I wonder whether any of your correspondents have noticed the unusual scarcity this season of *Rhytisma acerinum*—the parasitic fungus which causes the circular black spots on the mature and fading leaves of the Sycamore. In most years it is difficult, at least in the north and west, to find a Sycamore whereof the foliage has not been marked by this agency; indeed, so universally are trees of this species affected that many people regard these spots as part of the normal colour design of the leaf. This year I have found in many places, as widely separated as Ayrshire and Surrey, that the leaves of most Sycamores show no sign of *Rhytisma*. This is the more remarkable, because while the summer in the south and west of Scotland was one of prolonged drought and more than the average of bright sunshine, the English harvest was endangered by excessive wet and cloud. It may be noted that although in most seasons the colonies of this fungus appear in numbers incalculable upon Sycamores of all ages, they do not appear to have the slightest ill effect upon the health of the trees, nor can they be considered a disfigurement of the foliage. *Herbert Maxwell, Monreith.*

CONVOLVULUS MAURITANICUS.—Referring to Mr. A. C. Bartholomew's remarks (p. 253), our plant of *Convolvulus mauritanicus* has white stamens, the filaments are pure white, and the anthers creamy. It is the plant I have always known under this name, and is, I believe, widely so called in gardens. *Harold Evans, Llanishen, Cardiff.*

LATE PEAS (see pp. 203, 252, 280).—I sowed on a south border in February four quarts of Pea Gradus, which produced a splendid crop. We began picking on June 8. On July 6 the same border was sown with The Pilot, which we began to pick on October 11. We have gathered pods daily since that date, and at the time of writing (October 24) there is every promise of a supply for some time—provided, of course, that the weather remains favourable. Autocrat and Gladstone are the varieties that we depend upon for late use. The former I have always considered the best, although, as at Aldenham House Gardens, Gladstone has done better this season than I have ever known before. No doubt the season has been exceptional for late Peas. *J. B. Lowe, Greenhill Gardens, Warminster, Wiltshire.*

YEW POISONING.—There are many different kinds of Yews, and most of us have something still to learn about them. Here, in Co. Meath, there are large areas on which Yews abound, and the grazing cattle eat them off as high as they can reach, sometimes even gnawing the bark; there is no record of any case of poisoning. The leaves of Yew, as is well known, roll up in drying. So far as can be ascertained, the cases of

WISLEY NOTES.

POLYGONUM VACCINIFOLIUM.

SEVERAL patches of this delightful plant are in full flower at Wisley on the rockery, and add a delightful touch of light pink to the yellow and red autumn tints. There are several colour forms, but of them those of deep pink shade are the most pleasing. This Himalayan species seems to withstand both the wet and cold of autumn to a remarkable degree, and it should find a place in every rock garden.

AUTUMN TINTS.

THE landscape effects in which the R.H.S. Gardens are rich are at no time of the year finer than now. The thinning of the leaves of deciduous trees gives depth to the woodland,

"poisoning" are the result of the cattle eating Yew clippings, and I believe if the matter were thoroughly investigated the injury would be found to be due to the dried, rolled leaves piercing the walls of the stomach and causing inflammation. *T. Smith, Newry.*

FORMING NEW PLANTATIONS (see p. 244).—Mr. Webster rightly opens his remarks with the statement that the best trees to plant are "such as will produce the greatest quantity of the most valuable timber in the shortest space of time." Mr. Webster has much to say in favour of Larch, with which I agree in cases where this tree flourishes. My experience with Larch (and I have planted 400,000 trees during the past thirty-five years in various soils and situations) compels me to say that here it is valueless as a timber tree except under special conditions—deeply-trenched soil. I doubt if Mr. Webster would consider trenching practicable over many acres? Here the trees grow well for about fifteen years, when canker sets in and rapidly spreads over the whole tree. In such conditions, no grower would advocate the planting of Larches beyond their use as poles and rails for temporary fencing. Before recommending Larch, some notes should be given as to the hindrances to the growth of this tree, the soil in which it will thrive, and that in which it will not. Information of this kind would save intending planters much expense and disappointment. My experience leads me to state that of trees from which a return can be expected in, say, forty years, Corsican Pine is far and away the most useful. It grows fast in any soil or situation, and without any special preparations being made. I do not claim that the wood will fetch high prices, but for estate buildings and inside repairs the timber of Corsican Pine is valuable. Rafters 16 feet by 4 inches by 3 inches can be obtained from trees planted twenty-seven years ago. The wood is fairly free from knots, and is easily worked. The trees grow straight, are not affected by wind, and have not that 3 feet of kink at the base so characteristic of the Austrian Pine, which quite spoils this Conifer as a timber tree. *E. Molyneux, Swanmore Park Estate, Bishop's Waltham, Hampshire.*

ROSE MRS. M. H. WALSH V. SANDERS' WHITE (see p. 280).—Will Mr. Taylor describe the difference between these two Roses? I grow them both, and fail to see where they are dissimilar. My plant of Sanders' White has much more mildew on it than Mrs. Walsh; in fact, the latter variety is immune. Is not Sanders' White a later introduction? Certainly, either variety is a great advance on any other white Rose flowering at the same time. White Dorothy is poor; Troubadour I do not grow; but I note that the description differs but little from that of Excelsa. To make sure of their distinctness and the superiority of Troubadour I will add it to my collection and thank Mr. Taylor for drawing my attention to it. *E. Molyneux.*

HUMOGEN.—Mr. Machin kindly gave me a supply of the material for experiment; this was carried out on a smaller scale than had been intended owing to the possibility of my being found of some use in other spheres. In frames, Radishes were pulled on the peat-treated side and finished before any had been pulled from the other half of the frame; the accompanying Lettuces showed no apparent difference in size and growth, except that the only two that damped off in one frame were on the non-treated side. Endives in a cool house (well-established plants) showed no difference with and without the peat. Cauliflowers (cloche) no marked difference; three series, one without humogen, one with, and one with an ammonia extract of mountain peat: the largest example was amongst the last series, but there was no noteworthy difference in general. One set of Cabbages (winter) was given 4 grams of humogen to each alternate plant, thereafter they were watered with extract four times, and finally given 10 grams per plant; no difference could be perceived between those treated and untreated. In another set of Cabbages (a large and delicate-flavoured sort of German origin), on the half which was treated with waterings of humogen fewer bolted, and all but one of the full-sized ones (some 15lb.) were on the treated patch;

still, there was no regularity, some small and medium being also found there. Chou-rave (early green) seedlings planted out showed no appreciable difference between treated and untreated when mature. Shallots.—Those treated were given repeated waterings with the extract; on weighing:—Non-peat: peat: : 100: 115.3. Onions grown from bulbs on not very suitable ground gave by weights:—Non-peat: Peat: : 100: 149. Winter Onions planted out in the ordinary way gave:—Non-peat: Peat: : 100: 146. In this case top-dressings with nitrate of soda, and also of super and ammoniac sulphate, were given to the controls. All had a good dressing of bonfire ashes. Another set of Onions (spring sown) was half treated with humogen, and very little thinning was done in order to see whether the agent would allow considerable amount of crowding with good or fair results; there was no marked difference between control and treated parts, and it was not thought worth while to count and weigh the crop. A similar crowding experiment was tried with Carrots, but they have not yet been lifted. Potatoes.—In half a row 24 grams of humogen was given to each set when planted. Weight of crop gave:—Non-peat: Peat: : 100: 54. For watering a stock was kept in bottles, 50 grams to $\frac{1}{2}$ litre rain-water, and of this 4 fl. oz. were put to a gallon of water, that is to say an eventual dilution of 1 in 400. The only comment that seems justified with so little experience is that well-established plants do not respond in a marked manner; on the contrary, the rapid development of the Radishes from seed was remarkable. The effect on bulbs in pots confirmed what has already been published. *H. E. Durham.*

THE CLASSIFICATION OF APPLES.—Will the advocates of the classification of Apples state what would be its practical advantages? If they would interest themselves in eliminating three parts of the existing varieties and restrict the lists to sorts that are really meritorious, they would do good. It is not unusual to find as many as one hundred and thirty sorts in a nurseryman's catalogue! Surely, if such a list were half the size the inexperienced could make a much better selection. I am sure that many nurserymen would be glad to give the public less lengthy lists. What mainly interests growers is to know which Apples will succeed in their particular localities and soils. It is a well-known fact that in some districts Lord Suffield yields a superb crop, whereas in others the trees will barely live. Dumelow's Seedling (syn. Wellington) is another such example. Why does not the R.H.S. help us in this matter? It has a splendid opportunity in the magnificent collections which are brought together from various districts in connection with the autumn fruit show. *E. M.*

WOOLLY APHIS ON THE WILD CRAB.—I send you by this post a small box containing twigs of the common Crab Apple, badly infested with American blight. In a country lane with scrubby and overgrown hedgerows, about a mile from Atherstone, the Crab is growing freely amongst the Hawthorn, but neither the thorn nor the other plants have been affected with the blight. Last year about this time the blight was more plentiful than now. Excepting a few recently-planted, clean, young Apple trees, there do not appear to be any orchards in the neighbourhood. I have not noticed this pest in a wild state before and it may be of interest in drawing attention to the need for keeping these boundary hedges in better condition. The affected branches die back, and the whole plant assumes a starved appearance, with small foliage. In the same hedge both the white and black Bryony are very plentiful. *J. Murison.*

SIR JOHN HILL (pp. 241, 279).—The point of Garrick's lampoon is that he acted in Hill's "The Route," which fell flat, and Hill attacked the actor for being, in his opinion, the cause of the failure, the lines quoted by W. B. H. being Garrick's reply. He also published other clever lines subsequent to Hill's pamphlet satirising him for his improper pronunciation. Woodward was another actor whom the venom of Hill induced to retort in *A Letter to Dr. John Hill, Inspector-General*, in which he

accused the doctor of thieving. Hill wrote scurrilous articles in a paper called *The Inspector*, and the Ranelagh episode was the outcome of an attack on an Irishman named Brown, who plucked off the doctor's wig and pulled his ear. The titles of a few pamphlets which appeared at this period indicate the feeling against Hill:—*Spectatorhill, his late Pamphlet; Whipping Rods for Trifling Scurrill Scriblers*; and a *True Narrative of the Untimely Death of Dr. Atall*. These and other pamphlets have, of course, nothing to do with Hill's position as a horticultural writer, interesting as they are as indicative of the position he held in society. In the article on *Sir John Hill*, I omitted to state that *The British Herbal* was issued in sixpenny parts and the number of pages in each part of *Eden* was twelve, and not sixteen, as it seems to read. *R. P. Brotherston.*

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

OCTOBER 26.—*Present:* Mr. E. A. Bowles, M.A., Drs. A. Voelcker, A. S. Horne, Messrs. W. Bennett-Poe, W. Hales, E. Allard, J. Fraser, W. C. Worsdell, and F. J. Chittenden (hon. sec.).

Astelia Banksii.—A Botanical Certificate was unanimously recommended for this plant, shown by Lady ILCHESTER under the name *Pitcairnia albucaefolia*, and grown in a cold house at Holland House (not at Abbotsbury as previously stated) for some years until it flowered.

Lamium amplexicaule.—Mr. FRASER showed specimens of this common weed which, he said, usually produced cleistogamous flowers, but of which he had found specimens bearing well-developed open flowers in different localities in the north and midlands.

Potato tumour.—Mr. W. CUTHBERTSON sent a specimen of Potato in which the leaf was attacked by the organism of Potato tumour, *Synchytrium endobioticum*. The disease rarely occurs upon the aerial portions of the plant.

Magnesium and Lime.—Dr. VOELCKER drew attention to two cases of infertility in what was apparently good soil, to which his attention had been drawn recently. In both he had found abundance of the necessary elements of nutrition, but in each the percentage of magnesia was greater than that of lime. He has frequently drawn attention to the result of this excess of magnesia in producing infertility, and to the cure, which is application of a further dressing of lime.

Nerines, Time of Flowering.—Mr. BENNETT-POE drew attention to the time of flowering of a beautiful Nerine which he exhibited named *Rotherside*, which had been raised from seed of *Fothergillii* major, which flowers at the end of August, the pollen parent being unknown. The flowering time of the seedling was at the middle and end of October, owing probably to the influence of the pollen parent.

Malformed Honesty.—A curious fruit of *Honesty* sent by Mr. J. STALEY, of Hayling Island, was exhibited. The dissepiment had two outgrowths from it, so that four wings were produced at right angles to one another. The fruit shows slight signs outside of the presence of these wings in small folds of the valves.

Sporting in Coprosma.—Lady LAWRENCE sent shoots of a *Coprosma* for which the name *burfordensis* was proposed, in which the variegation of *C. Baueri* variegata from which it had sported was transposed. In the original plant the margin of the leaf was yellow, the centre green; in the sport the centre was yellow the margin green.

Supposed Sporting in Pear.—Mr. C. H. HOOPEN sent foliage from a large Black Worcester Pear tree about 80 to 100 years old and about 40 feet in height. It had, he thought, been grafted near the ground line. Eight feet from the ground a clean grown branch exists some seven years old, which has fruited some two or three years. The leaves of this branch are two or three times the size of those of the Black Worcester, and the fruit is golden and ripe at

the end of August instead of in late autumn. No budding or grafting has been done during the forty years the owner has known the tree.

It is, of course, difficult to say definitely whether the grafting was done at the bottom of the tree after this lapse of time, and if, as is possible, it was done some distance up, it is probable that the supposed "sport" is really a branch from the stock.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 21.—Committee present: Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. J. Bolton, J. Cypher, A. G. Ellwood, J. Evans, P. Foster, A. R. Handley, A. Hamner, J. Lupton, D. McLeod, W. J. Morgan, W. Shackleton, S. Swift, H. Thorpe, Z. A. Ward, G. Weatherby, and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Odontoglossum percutum var. *Mme. R. Le Doux*. Shown by Mrs. R. LE DOUX.

Cattleya Fabia var. *Saml. Gratrix* (labiate × aurea). Exhibited by S. GRATRAX, Esq.

C. labiata var. *R. Ashworth*. A large white flower, with orange lines in the throat. Shown by R. ASHWORTH, Esq.

AWARDS OF MERIT.

Cattleya Lady Veitch var. *Mrs. S. Gratrix* and *Odontoglossum Victory* var. *Gratrixiae*. Both shown by S. GRATRAX, Esq.

Laelio-Cattleya Mrs. Geoffrey Taite (L.-C. Orion × L.-C. Golden Oriole), from Mrs. LE DOUX.

Cattleya labiata Lowiae. Shown by R. ASHWORTH, Esq.

Sophro-Cattleya November (S. grandiflora × C. Portia magnifica). Shown by Messrs. J. and A. McBEAN.

AWARD OF APPRECIATION.

Odontioda Leopardina (Odontioda beechense × Odm. Vuylstekeii). Shown by R. ASHWORTH, Esq.

FIRST-CLASS CULTURAL CERTIFICATE.

To Mr. S. ROGERS, gardener to O. O. Wrigley, Esq., for plants of *Cypripedium Fairreanum*.

The following Medals were awarded for collections:—*Large Silver Medals* to R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden); and Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton). *Silver Medals* to Mrs. R. LE DOUX, West Derby (gr. Mr. J. W. Fletcher); Messrs. CYPHER AND SONS, Cheltenham; and Messrs. SANDER AND SONS, St. Albans. *Bronze Medal* to Messrs. A. J. KEELING AND SONS, Bradford.

DEVON AND EXETER HORTICULTURAL.

OCTOBER 29.—In common with many other provincial shows, the autumn exhibition of the Devon and Exeter Horticultural Society was abandoned last year, but the committee resolved, answering the call to provide all that is possible out of the land under existing circumstances, to revive the exhibition. Thus the 214th exhibition of the Society was held in the usual place, the Victoria Hall, on the 29th ult. The show was a greater success than was expected, the entries being only 60 fewer than those of 1913. The falling off was noticeable in the classes for large groups of Chrysanthemums, cut blooms, table decorations, and vegetables. The exhibits of fruit were not much behind those of former years either in quantity or quality.

The committee resolved that, with the exception of the special classes in which prizes were offered by seedsmen, 10 per cent. of the prize money should be devoted to the Mayoress of Exeter's Soldiers' and Sailors' Hospitality Fund, which has done so much for troops passing through the Exeter railway stations of the two leading trunk railways of the West. The president, Dr. Samways, is engaged locally in war hospital work. The secretary is Mr. T. A. Andrews. Nearly all the exhibits were at the close of the exhibition sent to the various hospitals for the wounded in Exeter.

CHRYSANTHEMUMS—CUT BLOOMS.

In the class for 24 Japanese blooms, not fewer than 18 varieties, Major Sir R. L. BAKER, Bart., M.P. (gr. Mr. A. E. Usher), was placed 1st, and H. WHITLEY, Esq., 2nd. Sir RANDOLF BAKER showed fine blooms of the varieties Miss Joan Stratton, Master Rex (particularly good), Bob Pulling, Mrs. R. C. Pulling, W. Turner, Frances Jolliffe, Master James, Queen Mary, Fred Chandler, Mr. J. Gibson, Julian Mears, W. Vert, Mrs. W. Kirby, Miss E. A. Tickle, Mrs. Lloyd Wigg and Mrs. H. Rigby.

The 1st prize in the class for 12 blooms was won by COLIN M. SMITH, Esq. (gr. Mr. T. Baskerville), with well-finished blooms of such fine varieties as Master James, Joan Stratton, W. Turner, F. S. Vallis, His Majesty, W. Mease, Alice Lemon, Pockett's Crimson, Lady Talbot and Mrs. R. H. B. Marsham.

For 6 blooms of a white variety, Sir R. L. BAKER was placed 1st, with Mrs. R. H. B. Marsham, W. Yurton and John Stratton, the last being especially fine. Sir R. L. BAKER also excelled in the classes for (a) 6 yellow blooms, those of Bob Pulling being grand specimens, (b) for 6 blooms of any other colour in two varieties, with Master Rex and Frances Jolliffe.

In the class for 6 incurved blooms, distinct varieties, H. WHITLEY, Esq., was awarded the 1st prize for Lady Isobel, H. W. Thorpe, Emblème, Poitevine, Godfrey's Eclipse, J. Wyne and Mrs. Geo. Denyer.

For 6 bunches of Pompons, WALTON HUSSEY, Esq. (gr. Mr. J. Ferris) was placed 1st with the varieties Elsie Jordan, Black Douglas, Prince of Orange and M. Swabey.

The 1st prize in a class for Winter-flowering or Tree Carnations, 3 varieties, 3 blooms of each, was won by Sir R. L. BAKER with Triumph, Champion and Pink Sensation.

In the class for plants in pots suitable for the decoration of dinner-tables, specimens of Begonia Mrs. John Heal were shown by A. LYTHALL, Esq., Lympstone (gr. Mr. C. Knibb), and constituted a feature of the exhibition.

The best dinner-table decoration was arranged by Mrs. O. BURTON, Heavitree.

FRUIT.—In the Grape classes the prize-winners were as follows:—Black Alicante: 1st, Mrs. SANDBACK HARRISON (gr. Mr. W. Davey); White Muscat: 1st, F. R. RODD, Esq. (gr. Mr. F. A. Billings); any other kind: 1st, F. R. RODD, Esq., with Gros Maroc.

The best collection of fruit was shown by Major H. ST. MAUR (gr. Mr. G. T. Richardson), and this gentleman was placed 1st for 24 dishes of Apples, 12 dessert and 12 culinary varieties.

For 6 varieties of dessert Apples the Countess of EGDMONT (gr. Mr. T. Ley) was placed 1st for good fruits of Coronation, Charles Ross, Allington Pippin and Baumann's Red Reinette.

Major ST. MAUR showed the best 6 varieties of culinary Apples.

The single-dish classes were well contested, the principal winners being Dr. SAMWAYS, Major ST. MAUR, A. LYTHALL, Esq., Rev. H. S. ATKINS, Shillingford (gr. Mr. F. Wakeley) and Mrs. EUGENE TRACEY.

The finest dessert variety exhibited was The Houblon, whilst the best specimen Apple was of the variety Peasgood's Nonesuch.

The 1st prize for a collection of 9 varieties of Pears, 6 dessert and 3 culinary, was won by F. R. RODD, Esq., who staged Emile d'Heyst, Léon Leclerc de Laval, Doyenné du Comice, Pitmaston Duchess, Catillac, Belle-sime d'hiver and Marie Louise. The 1st prize for any variety of a dessert Pear was awarded to Mr. JOHN CORR, Teignmouth, for Gansell's Bergamot; A. LYTHALL, Esq., showed the best culinary Pears in Belle-sime d'hiver; while the best-flavoured variety was Conférence, exhibited by Mr. LYTHALL, this being the first time for many years that Doyenné du Comice was not selected. The 1st prize for the finest specimen Pear was awarded to Sir R. L. BAKER for a fruit of Charles Ernest.

VEGETABLES.—The classes for collections were in all cases keenly contested, some excellently-grown vegetables being staged. The principal class was for a collection of 8 distinct kinds, in which Sir R. L. BAKER won the 1st prize.

A collection of Vegetable Marrows and Pumpkins were exhibited by the Bishop of Exeter (gr. Mr. Betts).

TRADE EXHIBITS.—Messrs. ROBERT VEITCH AND SON, Royal Nurseries, Exeter, staged a miscellaneous collection of Single Chrysanthemums, Perpetual Carnations, Orchids and ornamental-foliaged and ornamental-berried shrubs. Amongst other notable plants were Berberis nepalense, Tritoma grandis and many fine Nerines, including the beautiful Nerine Bowdenii, from the open ground. Messrs. VEITCH also staged about 80 dishes of Apples and 20 dishes of Potatoes. Messrs. JARMAN AND Co., Chard, exhibited Single Dahlias and an excellent collection of fruit. The DEVON ROSERY Co., Torquay, had an extensive and meritorious collection of fruit. Messrs. SAUNDERS AND BISS, of Exeter, displayed a representative collection of specimens of their art as horticultural builders.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 3.—At the meeting of the Floral Committee of the above society, which was held in Essex Hall, London, on this date, fewer novelties were submitted for award than at the previous meeting. Two First-class Certificates and one Card of Commendation were awarded to new varieties, and the Committee expressed a wish to see again a single-flowered variety named Edith Dimond.

FIRST-CLASS CERTIFICATES.

Amber.—A market Japanese variety of good form and attractive bronzy-amber colouring. Shown by Mr. NORMAN DAVIS.

Mrs. M. Sargent.—A large Incurved Japanese variety of Mrs. G. Drabble type and novel colouring which was officially described as white shaded with green. Shown by Messrs. W. WELLS AND Co.

CARD OF COMMENDATION.

Sarccerer.—A market Japanese variety of medium size and good shape. The colour is similar to that of Source d'Or, but the orange shade is deeper. Shown by Messrs. CRAGG, HARRISON, AND CRAGG.

Obituary.

MATTHEW MACNAIR.—From the *American Florist* we learn of the death of Mr. Matthew Macnair, a florist of Providence, R.I., U.S.A., who was a native of Glasgow. He was born in 1845, and emigrated to America in 1870. He began business as a florist about twenty-five years ago at Providence, where he built up a considerable trade, specialising in Palms.

GARDENING APPOINTMENTS.

Mr. E. Clements, for ten years Gardener to the late MAJOR-GENERAL TALBOT COKE, Trusley Manor, Derby, as Gardener to LORD CHARLES BENTINCK, Ranby Hall, Lincolnshire.

Mr. Alfred J. Deighton, as Gardener to Mrs. ARTHUR LEVITA, Norton Priory, Selsey, Chichester, Sussex.

Mr. W. Voller, for the past 33 years Gardener at Westbrook Hay, Boxmoor, Hertfordshire, and previously Foreman at Camfield Place, Hatfield, a Gardener to Mrs. HESLITINE, Tatchbury Mount, Totton, Hampshire, [Thanks for 1s. for R.G.O.F. Box.—EDS.]

Mr. E. Clark, for the past three years Gardener to Miss MCALPINE, Rosemount, near Maidstone, a Gardener to Mrs. S. M. PHILLIPS, Wrotham Hill Park, Wrotham, Kent.

CATALOGUES RECEIVED.

H. CANNELL & SONS, Eynsford, Kent.—Fruit Trees, Roses, Hardy Plants, Trees and Shrubs.
H. J. JONES, LTD., Ryecroft, Hither Green, Lewisham.—Chrysanthemums, Michaelmas Daisies, Perennial Phloxes, Pelargoniums, Fuchsias.
WM. WITSON & SONS, LTD., Clontarf Nurseries, Dublin.—Fruit Trees, Shrubs, Roses.

Foreign.

M. LEENDERS & Co., Steil-Tegelen, Holland.—New Roses.
M. IUDIC, Naples, Via Trivio, 24-26, Italy.—Novelties in Flowering Plants.
ANT. ROOZEN & SONS, Overveen, Holland (London agents, Mertons & Co., 3, Cross Lane, St. Mary-at-Hill)—Bulbs.

THE WEATHER.

WEATHER IN WEST HERTS.

Week ending November 3.

A Cold and Wet Week.—During the week there were only three unseasonably warm days and but one warm night. On two nights the exposed thermometer registered 8° of frost. The ground is at the present time 3° colder at 1 foot deep and 2° colder at 2 feet deep than is seasonable. Rain fell on all but one day and to the total depth of 1½ inch. On the last day of October rain was falling continuously during the night and early morning for fourteen consecutive hours, and to the total depth of ¾ inch. During the week seven gallons of rainwater came through the bare soil percolation gauge, and 6½ gallons through that on which short grass is growing. The sun shone on an average for 2½ hours a day, which is about the mean daily duration for the time of year. Except on the last day of October, when there was a light wind, light airs and calms alone prevailed. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 3 per cent.

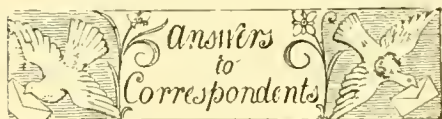
OCTOBER.

Cold, Dull and Remarkably Calm.—Taken as a whole this was a rather cold October. The first and last ten days were cold, while the middle of the month proved on the whole warm for the time of year. On the warmest day the temperature in the thermometer screen rose to 66°, and on the two coldest nights the exposed thermometer registered 8° of frost. Neither of these extreme readings is in any way remarkable. Rain fell on eleven days and to the total depth of 2½ inches, which is ½ inch below the average rainfall for the month. Nearly the whole of the rain fell during the last nine days. The sun shone on an average for 2½ hours a day, which is an hour a day short of the mean daily duration for October. On ten days no sunshine at all was recorded. Taken as a whole this was much the coldest October that I have recorded here during the twenty-nine years over which my records at Berkhamsted extend. In no hour did the total velocity exceed eleven miles, which is also the lowest maximum velocity I have recorded here for any hour in October in any of those years. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 1 per cent. E. M.

DEBATING SOCIETIES.

BRISTOL AND DISTRICT GARDENERS'.—At the fortnightly meeting of this Association, held at St. John's Parish Rooms on Thursday, the 28th ult., Mr. Roper, a member of the Bath Society, read a paper on "The Cultivation of Onions." The lecturer's remarks were well received, and he answered numerous questions.

BATH GARDENERS'.—The fortnightly meeting of the Bath and District Gardeners' Debating Society was held on Monday, the 25th ult.; Mr. R. Parrott presided. A paper on "Fungi and their Work in Nature" was read by Mr. W. C. Scadding, of the Midsomer Norton and Radstock Society. Mr. Scadding said that the fungous flora of the world included over 50,000 different species, of which 4,000 were met with in Great Britain.



CARNATIONS DISEASED: *Gardener, Hants.* The plants are affected with Black Mould, *Heterosporium echinulatum*. Spray with potassium sulphide at a strength of ½ ounce in two gallons of water. Diseased leaves should be gathered and burned. Keep the foliage as free from moisture as possible.

CORRECTION.—SEED OF DOUBLE STOCKS.—The statements made under this heading (p. 234), though true of certain plants such as Daffodils, do not hold good for Stocks. In the case of these plants the doubles set no seed. Certain strains of single-flowered Stocks, however, produce both double and single-flowered offspring, and it is from the singles of such double-throwing strains that doubles are habitually raised. The proportion of doubles to singles varies in different strains, and may be so high as 80 per cent. Raisers of seed are careful to keep strains in which the doubles appear in high proportions. Various claims have been put forward by growers as to special methods of cultivation whereby the numbers of doubles are increased. These claims have been investigated by Miss Saunders—to whose researches we owe our knowledge of the genetics of Stocks—and appear from her observations to be ill-founded.

The singles produced by any sample of seed which throws both doubles and singles may be used for the purpose of continuing the race of doubles, for they in their turn will give seed which produces both doubles and singles. For information on the subject of double flowers see *Gard. Chron.*, May 16, 1914, p. 332.

CYANIDING HOUSES: *J. C.* The ingredients for a cyanide fumigant to be used for a house of mixed plants to destroy mealy bug and red spider are as follows:—Sodium cyanide, 1 oz.; phosphoric acid, 1 oz.; water, 4 oz., for each 1,000 cubic feet. Fumigate three times at intervals of a week to ensure complete destruction of the pests. The best time to fumigate a Vine-house is after the fruit has been gathered and before the leaves have fallen. No injury is likely to ensue except to the young shoots of particularly delicate plants.

FILLING A CAVITY IN A CHESTNUT TREE: *Castanea.* First remove all the water which has collected in the cavity. If the hole is not more than a few inches deep the water can usually be got rid of by mopping it out with a sponge or some similar absorbent material. When the hole is too deep for this method it should be tapped by boring through the trunk to the base of the hole, using a large auger. The depth of the cavity should be measured in order to find the correct place for boring. Then commence a couple of inches lower, and bore in an upward direction to the base of the cavity. Next, all the decayed tissue must be removed, and to do this effectually it is often necessary to enlarge the cavity, especially when it is funnel-shaped. When the cleaning has been done time must be allowed for the cavity to dry. At this time of the year tree cavities dry slowly; if necessary, the drying may be hastened by the use of a blow-lamp, although generally it is as well to wait for the hole to dry naturally. If it is exposed to rains sufficient old sacking should be plugged into the hole to prevent the rain from entering. When sufficiently dry the cavity should be dressed with Stockholm tar, creosote or carbolineum. Allow a few days for the dressing to dry, replacing the sacking to prevent the rain from entering, and then the cavity will be ready for filling. The correct filling depends on the position of the cavity, as well as on the condition of the tree and its exposure to winds. This could only be decided upon after an inspection by someone with expert knowledge, but you will probably find concrete the best material. Generally the most suitable concrete is made of one part of good Portland cement to two parts of sand and four parts of gravel, mixed with sufficient water to make it cohere and be slightly moist. The hollow should be filled gradually, putting the concrete in layers a few inches thick, and allowing each layer to set before the next is added. Care must be taken to see that the concrete fills the cavity perfectly. The last layer should be arched so that all rains will run off easily. As it is difficult to form a perfect union with cement and wood you will find that after a short time the concrete has shrunk, leaving a small space at the sides. This should be filled with cement. The cambium should be encouraged to form a growth over the edges of the concrete.

GOOSEBERRY CUTTINGS DISEASED.—The cuttings you send are affected by American Gooseberry mildew, and you should notify the Board of Agriculture of the fact. Remove all affected shoots and burn them, together with the soil round the bushes and any prunings which may have fallen on to the ground. In order to prevent future attacks care should be taken to purchase healthy plants, which should be pruned before planting. Infected soil should be removed and burnt, and the new plants placed in fresh soil. All packages in which diseased bushes or berries have been placed should be treated with a solution

of 1 lb. copper sulphate in 20 gallons of water. The bushes should be carefully and regularly inspected, and sprayed in spring and summer with liver of sulphur and soft soap. Nitrogenous manures should be sparingly used.

INSECT BORING APPLE TREE: *A. S.* The insect you send is the larva of the Goat moth, *Cossus ligniperda*. In order to kill any larvae which may be still in the trees the best plan is to place lumps of stick cyanide in each hole and smear the whole trunk over with clay, firmly plugging the entrances to the holes. In order to prevent attacks in trees growing near those affected the trunks should be smeared over in May with a thick paste made of clay, lime and soft soap. The trunk should be painted with this mixture up to a distance of 8 feet from the ground, and a thick layer placed round the base and over any exposed roots.

LEAVES EATEN: *Dun.* We cannot find any trace of the pest which has caused the damage to the leaves. It is, however, evidently the work of a leaf-eating insect, and we should advise you to spray the trees as a preventive. It is too late now to use a summer wash, but as soon as all the leaves have fallen spray the trees with a caustic preparation. A good specific is made from iron sulphate ½ lb., lime ½ lb., caustic soda 2 lbs., paraffin (solar distillate) 5 pints, water 10 gallons. Dissolve the iron sulphate in 9 gallons of water, slake the lime in a little water, and then add more, so as to make it into milk of lime; run the latter into the dissolved iron sulphate through a fine sieve; churn the paraffin into the mixture, and finally add the caustic soda. In the spring, when the leaves are still young, but fully developed, the following wash should be used:—Arsenate of soda 3½ ozs., acetate of lead 7 ozs., water 10 gallons. Dissolve both ingredients together in the water, stir well, and then add a pound of treacle. If the trees are sprayed as soon as the fruit buds show signs of bursting, and again as soon as the blossom has fallen, you will probably find that the pest has disappeared.

MAGGOTS ON CHRYSANTHEMUMS: *A. J. C.* The maggots are all Syrphid or Hover fly larvae. They cannot be eating the buds of your Chrysanthemums, for their food consists of aphides and scale insects. The maggots are thus beneficial and not harmful.

NAMES OF FRUITS: *F. Clark.* 1, Sturmer Pippin; 2, Stirling Castle; 3, Striped Beefing; 4, Court of Wick; 5, Marie Louise.—*Gardener, Herts.* 1, Nonpareil; 2, Hanwell Souring.—*Fife.* 1, Shepherd's Fame; 2, Winter Strawberry.—*J. J. G.* 1 and 2, Lord Derby; 3, Maltster; 4, Uvedale's St. Germain; 5, General Todleben; 6, King Edward's.—*J. L.* 1, Barnack Beauty; 2, Scarlet Nonpareil; 3, Domino; 4, Hornead Pearmain; 5, Emile d'Heyst.—*A. H. C.* Beurré Hardy.

NAMES OF PLANTS: *G. E. G.* *Euonymus oxyphyllus*.—*B. L.* 1, *Cupressus nootkatensis*; 2, *C. sempervirens*.—*M. C.* *Worcestershire.* We do not recognise the varieties of *Michaëmas* Daisies.—*L. C. K.* 1, Probably *Gaultheria procumbens*; 2 and 5, *Berberis vulgaris*; 3, *Olearia stellulata*; 4, *Eccremocarpus scaber*; 6, *Philecia buxifolia*.—*W. S.* *Herts.* 1, *Sternbergia lutea*; 2, *Calycanthus floridus*.—*T. Ireland.* 1, *Phytolacca decandra*; 2, *Salvia angustifolia*; 3, *S. leucantha*.

NON-POISONOUS INSECTICIDE: *Fly.* You should write on this matter to the Assistant Home Secretary, Home Office, Whitehall, London.

SEEDLING APPLE: *M. McK.* The variety resembles Lord Derby, but it shows no special merit, and is not superior to varieties already in cultivation. The very irregular shape of the fruits would be considered a fault in a culinary variety.

Communications Received.—K. A. (Thanks for postal order for R.G.O.F.)—W. H. D.—F. R.—C. R. D.—H. E. D.—B. Ltd.—F. C.—W. H.—W. L.—R. F.—J. B.—W. T.—F. J.—W. L.—S. C.—S. A.—W. N.—W. E.—R. P. B.—E. M.—J. B. M.F.—S. M. Paris S. S. C'tee.

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TRENCHING AND ITS SUBSTITUTES.

WE have no means of ascertaining for how long a period deep cultivation has obtained as a practice of first-class importance in garden management. Lawson (1618) describes a method of preparing ground for fruit trees, which is the earliest account of trenching with which I have met. He excavated a trench 4 or 5 feet in width and 18 inches deep, and filled it to the ground level with manure, and overlaid this with material from the next trench, and so with the remaining portion to be cultivated. Parkinson a few years subsequently also recommended trenching for both flowers and vegetables, and John Evelyn in his *Discourse of Earth* (1675) advises ground to be prepared by turning the turf and upper part of the soil into the bottom of the trench, and the lower portion to be brought to the surface, "as the manner is of experienc'd Gardiners." John Reid, the Quaker gardener to Sir George Mackenzie, gives similar advice, and Mortimer in 1708 expands the directions of previous writers and meets the objection that earth brought from the underpart of the trench will be barren, by pointing to the ameliorating influences of weather, and to the value of manure introduced near the surface as means of fertility. Passing to the end of the century, Walter Nicol, a Scots gardener, recommended trenching three spits deep, rotating the several planes thus:—The first time the top spit was turned into the bottom, the middle into the middle, and the bottom to the top. Three crops were taken, then the ground was trenched two spits deep, the former middle being brought to the top, and the top, formerly

the bottom, placed in the middle. After three crops there was a three spit course, when there was again a shifting of all the strata. The old-fashioned reason for thus changing the strata was due to the belief that "new" soil was brought to the surface and placed within easy reach of the roots of vegetation, while there was a period of recuperation assured to that which for a time had been less or more subjected to exhaustion.

There have been various ways of utilising manure. Lawson, as we have seen, placed an enormous quantity in each trench, while a better system is that of stratifying it, though the practice of placing manure in the bottom of the trenches in the expectation that it would benefit the soil, which three or four years later would be brought to the surface, has little to recommend it. A very slight consideration will show that manure introduced near the surface where vegetation could at once benefit by it is to be preferred to delaying its employment until its value has become greatly reduced. Now that manure is so scarce, the inexpediency of burying manure deep scarcely calls for comment. One thing we are sure of is that manure worked into the surface layer of soil, no matter how near to the surface it may be, will perform what is expected of it in the shortest possible time, while to bury it deeply delays, if it does not frustrate, that expectation.

It is patent that many gardeners, owing to shortage of labour, can employ only the most rapid methods of cultivating the soil. Those who have consistently trenched in the past are in a position to suspend trenching for the present, without a danger of falling short of usual supplies to an appreciable extent, provided they labour the superficial stratum to the highest degree, and that they are careful to save labour by growing vegetables which are not exacting. At all times there are crops that can be produced without even digging as a preparation. Such are Brussels Sprouts and Broccoli, and of flowers Carnations, Pelargoniums, and Nasturtiums may be mentioned as those which succeed under similar conditions, and also Dahlias for decorative purposes. Lettuces, Turnips, Radishes, Spinach, Parsley are a few that succeed with a few inches near the surface thoroughly pulverised and fertilised. Peas do well after Broccoli, with every alternate furrow prepared for their reception, and where deep cultivation is required it may be confined to Carrots, Parsnips, and Beets.

It is very important that all ground as it is vacated of crops in autumn should then be dug deeply, burying all leaves, Pea haulm, and any other readily decomposable material. This cannot be effected properly unless a very ample furrow is excavated at the start; a custom which should be always followed, because not only does it allow the workman space to bury rubbish, but it enables him more perfectly to pulverise those clods which fall back into the furrows, a very important item in digging. It is not at all necessary to introduce manure on this occasion, which

can be more conveniently wheeled to and spread on quarters during suitable weather in winter, and later, once the soil is in fit condition, the ground should again be dug or forked over, and the manure incorporated near the surface—for I am assuming manure to be too scarce to bury it deep—and the soil pulverised in a very thorough manner. On this item there should be no attempt to save. During the cropping period it is essential to keep the work well in hand. Once surface operations are allowed to get behindhand it is impossible to catch up. There is, indeed, no method of reducing labour to equal that of being slightly in advance of crop requirements. It is consequently preferable that the hoe should be used among crops before weeds are visible, rather than that the operation be put off till they have grown an inch or two, thinking thereby to save labour. The same is true with respect to deep surface stirring. It can be rapidly performed before the surface becomes hardened, or clothed with noxious vegetation, but once the workman has to exert more than ordinary force to work his tool, and has his attention diverted to weeds, the operation exacts considerably more time to accomplish. These operations are, of course, always necessary, but they are more so when less cultivation is bestowed by the spade, and though it may seem a waste of time to operate on surfaces which are apparently requiring nothing to be done to them, still experience has proved that the system I am advocating effects an immense saving in labour. Surface stirring, moreover, has such a beneficial effect on crops that one is sometimes apt to deem Tull's theory that it renders the use of manure unnecessary not far from the truth. Most certainly it goes a long way to make up for shortage of manure, and on that account also it becomes imperative to give it a very prominent place in the cultivation of all gardens. It differs from skimming the surface with a Dutch hoe, which has its advantages in stirring the ground to a depth of four inches or so. It is work that almost anyone can do, and it is much cheaper, or, in other words, takes less labour to accomplish a given plot, than were the surface turned with a fork, which is also a valuable aid to cultivation. *R. P. Brotherston.*

PLANT NOTE.

SALVIA SPLENDENS.

A GOOD-SIZED circular bed in a villa garden near where I write, filled with well-flowered plants of *Salvia splendens* and edged with the silver-leaved *Pelargonium Mangles' Variegated*, is very telling in effect—the mass of scarlet, neat-growing, feathery flowers, thrown well above the green foliage, contrasting very effectively with the encircling band of the variegated-leaved *Pelargonium*. I have not hitherto seen such a floral display of this old greenhouse-flowering plant out-of-doors. The plants are still in fine flower, and if taken up and potted into 24-size pots would make a pleasing show in a heated greenhouse during the winter and early spring months. *H. W. W., November 3.*

NEW OR NOTEWORTHY PLANTS.

LILIUM CERNUUM.*

THOUGH described by Komarov fourteen years ago and cultivated for some time past by Kesselring at Petrograd, there does not seem to be any record of the flowering of *L. cernuum* in this country until June of the present year, when it was in bloom in Mr. Amos Perry's nursery at Enfield.

In general terms the Lily may be described as a pink-flowered tenuifolium, but it appears to be a good species, for, apart from the clear rose ground-colour of the petals, which alone would hardly entitle it to specific rank, the flower has the good botanical characteristic of fragrance.

It has another and minor peculiarity in that once the flower-bud opens it is in a hurry to complete the business, the segments expanding and becoming revolute in a very short time; hence Komarov's use of the expression "ab initio anthesis perfecte revoluta," in his description of the plant.

The bulb, however, of which fig. 107 shows a particularly plump specimen, corresponds to that of tenuifolium, and if the dictum is to hold good that Lilies having identical bulbs, but varying characteristics in other directions, must be regarded as belonging to one species, then *L. cernuum* must be looked upon as a variety of *L. tenuifolium*.

Komarov discovered *L. cernuum* in 1897, and gave it a geographical distribution through Northern Korea to the boundaries of the provinces of Kirin and Mukden: he reported it as growing in stony, clayey ground on grassy mountain slopes.

In 1902 the Japanese Uchimaja came upon it in Kang-uön, as well as on Mount Kumgang-san (Korea), while in 1907 Faurie collected it on Mount Hallaisan in Quelpart Island.†

Nakai§ has reduced *L. Palibinianum* of Yabe|| to this species, and *L. Taquetii* of Léveillé¶ as well; he has presumably seen all three in a living state, for the descriptions of the two Lilies in question do not lead one to conclude they have any connection with *L. cernuum*.

Though the illustration in fig. 106 shows a two-flowered plant there is no reason to suppose that when established and suitably cultivated this Lily should not be many-flowered and of greater stature, though the size of the bulb precludes any likelihood of its proving anything but a miniature Lily.

L. cernuum is a decided acquisition.

Bulb small, perennial, oblong-ovoid with a few ovate-acuminate or ovate-lanceolate scales. Stem 30-80 cm. long, terete, smooth or furrowed, erect. Leaves numerous, narrowly-linear adpressed to the stem, 8-18 cm. long; 1½-3 mm. broad, distinctly 1-nerved, with the edges narrowly revolute. Raceme lax, 1-6 flowered, pedicels elongated 5-15 cm. long, straight, reclinate at the apex; bracts minute, solitary linear-lanceolate, attenuate at the tip. Flowers nodding, lax, fragrant, the perianth always lilac, the seg-

ments broadly lanceolate, 2 cm. broad, 3½-4½ cm. long, completely revolute from the beginning of flowering, laxly disposed, the upper part hooded, and the surface covered with innumerable oblong deep-violet spots; nectariferous furrow about 15 mm. long, linear, deeply excavated, densely papillose on the margins towards the base; filaments a little shorter than the perianth, anthers deep violet, about 12 mm. long, ovary extending to 1 cm. long, style clavate, somewhat shorter than the anthers. Capsule not seen.

Near *L. tenuifolium* Fisch. and *L. callosum* Sieb. and Zucc., but differs markedly by its lilac drooping scented flowers and other characters as described. *A. Grove.*



FIG. 106.—*LILIUM CERNUUM*: COLOUR OF FLOWERS ROSE WITH VIOLET SPOTS.

ORCHID NOTES AND CLEANINGS.

POLYSTACHYA PANICULATA (see p. 286).

IN reply to Mr. E. Brown, the West African record of habitat rests on the identification by Mr. R. A. Rolfe of the Uganda specimen with *Dendrobium paniculatum*, Sw. in *Schrad. Neues Jour.* I. (1805), 97, and so far as I know no living specimens of the plant from that locality ever arrived in England. About 1904 Major Rattray, who sent the first specimens of *Angraecum infundibulare*, sent a few plants which travelled badly and probably did not survive. In 1909 the late Mr. John Hughes sent from Uganda a few good specimens, one of which flowered with Messrs. Charlesworth and Co., and was the specimen illustrated in *Gard. Chron.* It is probable that *Polystachya paniculata* may be found in West Africa, for the *Angraecum* (*Mystacidium*) *infundibulare* was first

recorded from that region, although the earliest to appear in the gardens came from Uganda. *J. O'B.*

Polystachya paniculata has an interesting distribution, occurring in Sierra Leone, the Gold Coast, and Uganda, and thus may be one of the species which extend more or less interruptedly through the great forest region that stretches across the continent. The species was originally described by Schwartz, in 1806 (*Schrad. Neues Jour.* I., p. 97), under the name of *Dendrobium paniculatum*, and was treated by Lindley as a doubtful plant (*Gen. and Sp. Orch.*, p. 92). When the Orchids were being worked up for the *Flora of Tropical Africa*, the original specimen was kindly lent for examination by Prof. Fries, and proved to be a species of *Polystachya*. It was included in the work under the name of *P. polystachya* (VII., p. 113). In November, 1899, the same plant was collected on the Aburi Hills, Gold Coast, by Mr. W. H. Johnson, and in May, 1908, a fine specimen was received at Kew which had been collected in the Mahira Forest, near Chagwe, in the Uganda Protectorate. On August 16, 1910, a plant was exhibited at the R.H.S. meeting by the late Sir Trevor Lawrence, and received a Botanical Certificate. Somewhat later it also flowered with Messrs. Charlesworth and Co., and at Kew, the latter plant being figured in t. 8,618 of the *Botanical Magazine*. It was there stated that Sir Trevor's plant was sent by Captain C. T. Lawrence, but this appears from the note by *J. O'B.* to be a mistake. It is an attractive little plant, bearing panicles of light-red flowers, and it seems interesting to put its history on record. *R. A. Rolfe.*

DISA GRANDIFLORA.

ALTHOUGH more than half a century has passed since this fine terrestrial Orchid received the R.H.S. First-class Certificate, it is seldom seen in perfection, which is doubtless due to attempting to grow the plant in unnatural conditions. The general fault has been too much heat. It grows wild on the Table Mountain at the Cape, and will withstand as low a temperature as any cool-house Orchid. The plant is found most plentifully on the sides of narrow watercourses which intersect the somewhat flat land, the sides as a rule being nearly upright. Numbers also grow wild on the face of large rocks, down which water is nearly always trickling. This shows that the plant does not require prolonged rest, for it grows almost in water, the soil being damp even during the driest months.

Established plants have already commenced to grow and need immediate attention in repotting, for the roots will withstand being disturbed better now than at any other time. The roots are extremely brittle and easily injured; care should, therefore, be taken not to bruise or crack them. Turn the plants out of their pots and remove from the stronger shoots the long, white, root-like offshoots, as these will develop tubers and roots at the expense of the tubers which support the flowering growths. A number of these small portions may be placed together in suitable-sized pots, and when well rooted may again be divided to increase the stock or be transferred to larger receptacles. The strongest or flowering shoots may be potted in small pots, and when well established in the spring shifted into pots two sizes larger. During the growing period the roots need abundance of water; therefore use plenty of drainage material, especially for the larger pots. The compost may consist of rich fibrous loam, *Osmunda*-fibre and sphagnum-moss in equal parts. The *Osmunda*-fibre and Sphagnum should be cut up rather finely, to mix well with the loam. Add plenty of small crocks and coarse silver or river sand, to render the compost porous. Press the soil around the plants

* *Lilium cernuum* (Martagon).—Bulbus parvus perennis oblongo-ovoid-us squamis paucis ovato-acuminatis vel ovato-lanceolatis. Caulis 30-80 cent. longus teres, laevis vel sulcatus, erectus. Folia numerosa anguste linearia cauli adpressa 5-15 cent. longa, 1½-3 mill. lata, distincte uninervia, marginibus anguste revolutis. Racemus laxus 1-6 florus, pedicellis elongatis 5-15 cent. longis rectis, apice reclinatis; bracteis minutis solitariis linearis-lanceolatis apice attenuatis. Flores cernui laxi, odorati, perianthium semper lilacinum, segmenta late lanceolata (2 cent. lata, 3½-4½ cent. longa), ab initio anthesis perfecte revoluta, laxae dispositae, apice cucullata, facie punctis atro-violaceis oblongis numerosis praedita, fovea nectarifera circiter 15 mill. longa linearis profunde excavata, marginibus basis versus dense papillosa; filamenta perianthio parum breviora antheris atro-violaceis circa 12 mill. longa, ovarium ad 1 cent. longum, stylo clavato antheris sub breviori. Capsula non visa.

† Affinis *L. tenuifolium* Fisch. et *L. callosum* Sieb. et Zucc. sed hinc differt floribus lilacinis cernuis odoratis alisque signis descriptis.—Komarov in *Flora Manchuricae in Acta. H. et. Petrop.* XX. (1901), p. 461.

‡ *Flora Koreana* (1911), Vol. XXXI., p. 256.

§ *Ibid.*

¶ *Ibid.*

|| *Tokyo Bot. Mag.* (1903), XVII., 134.

¶ *Fedde, Rep.* (1908), 233.

with moderate firmness, but not so hard as to prevent water passing freely through it; in fact, water should almost pass through the compost as through a sieve. After repotting, stand the plants on inverted pots or pans placed on a cool, damp surface. For this purpose thick slate slabs are suitable, and the slates should be constantly moistened, even the last thing at night, and again in early morning. Slate slabs keep the air immediately under the plants sweet and are therefore better than close, moisture-holding material. The plants grow best in an airy position in the cool Orchid house or in a damp, airy greenhouse. Plenty of light is essential, but not strong, direct sunshine. The cooler the plants are kept during the winter (within reasonable limits) the better, and the slower growth develops during the next two months the stronger will it be in the spring. Do not arrange the plants on high, dry shelves, where they will be subjected to warm, dry currents of air. As soon as the potting is completed water each plant copiously with cold rainwater and again when the compost becomes fairly dry. If at any time after the plants have become well rooted the foliage shows signs of flagging, soak the compost by immersing the plant in water for several minutes. Whenever the weather is warm and summerlike, the plants may be sprayed lightly overhead several times daily with cold rainwater, to keep the atmosphere cool and damp. Whilst making their growth, and especially during warm, sunny weather, the axils of the leaves are very liable to infestations of small yellow thrips. The pest may be destroyed by tipping the foliage occasionally in insecticide made from nicotine soap at the rate of about 2oz. to one gallon of warm soft-water, with a tablespoonful of A. L. All insecticide. Care must be taken that none of the liquid reaches the roots; therefore, after dipping the foliage, place the plants on their sides. After a short time and before the leaves become quite dry, syringe the plants with tepid, clear, soft water. W. H. W.

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

XIX.—THE BEGINNING OF 1915.

THE dawn of spring comes late and slowly to the dust-dry yellow downs and valleys about the Yellow River. No sign of any green thing was visible when we rode out of Lanchow at the end of March, pursuing for two days the course of the mighty Hwang Hor, and then diverging over the lifeless loess fells into the wide tributary valley of the Siping Hor. It is a desolate and barren land; its only approach to a tree is the *Zizyphus*, grown here and there in thorny orchards. Otherwise one traverses long plains of loess, hedged in afar on either side by arid, undistinguished downs of ochre-yellow, offering no suggestion that any vegetation can grow on them were it not for the broad sheep-walks that go winding up their fleshless slopes like so many Dolomitenstrassen. A few days before reaching Sining, however, matters improve, and the valley, though still dull, and still ringed by those dreary dead fells that never turn to a livelier note, grows warmer and more fertile. The Jujube is replaced by flowering fruit-trees, and each village and townlet lies in a soft mist of green Poplars. Sining itself, the border capital, stands at the cross-roads of four valleys, the course of the river being intersected at right angles by other wide vales descending from the north and running to the south. And at the head of these appears at last the hope of the season. For, though the landscape is still

all dust-coloured undulations into the far distances, yet these far distances are blocked at the end of each valley by high snowy ranges—in the west the wall that holds in the Holy Sea, Koko-nor the Blue, while on the north stand out the peaks of the Da Tung Alps, and on the south the long and splendid line of snows from Gweite to Ba-yen-rung.

Sining is no match for Lanchow: it is a rather dingy town, huddled within its square of walls, which here, for once, is not of regular design, for while the wall was building and still plastic a dragon unconsciously came and lay down against one side, and bulged it all in. The streets are perpetually gay with strange dresses and peoples—Mongols, Tibetans, Tartars, Turen; its roofs are of flat mud, along which one can ramble indiscreetly at will, looking down into the well-like little garden in the inmost court of each comfortable house. Here, in April, *Viburnum* fragrans is a bower of scented beauty, and more and more relieves me from fear lest it share the fads of *Chimonanthus* about summer ripening, as I find it luxuriating in loveliness ever further and further north, till my latest sight of its pearly bushes was in an

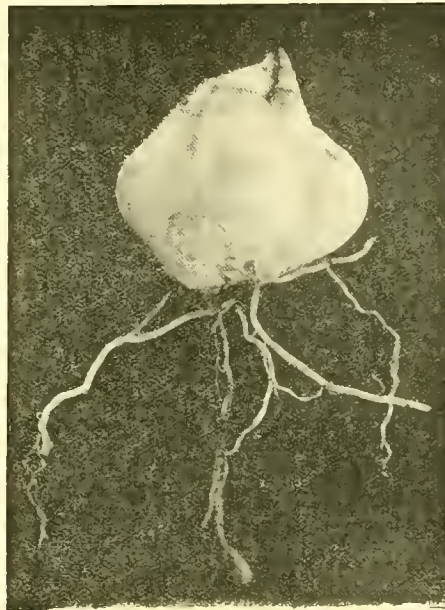


FIG. 107.—BULB OF *LILIAM CERNUM*.
(See page 302.)

alpine village so cold that corn will not ripen in its fields. The *Viburnum*, in fact, seems to be a universal pleasure-shrub throughout North China. The military governor of Sining has a delightful big old garden, all a neglected jungle of Peaches and Paeonies, amid which stand stately, superb specimens of the *Viburnum*, pink and white, the white form being for all the world like a forced white Lilac of crystalline texture. As for the Peaches, they baffle my brain to name and my tongue to tell of. All the town turns a mist of pink when the single-flowered fruiting tree is in bloom, while each garden contains a slender-twigged large shrub, wiry and elegant, covered in a profusion of richly-glowing, double, rosy blossoms, that I should confidently call the most beautiful in their race, did I not always want to say the same of every *Prunus*, *Amygdalus*, *Pyrus* and *Cerasus* that crosses my path.

In Sining we had yet another month of delay, foreseeing that even the foothills of the Alps would not be showing life till May was well in. So, maturing our summer plans, we were in time to hear the result of our last year's work. News of at least seven new species of *Primula* discovered gave us fresh heart; but I find I have made several avoidable mistakes by trusting

blindly to the names under which Purdom's plants of 1911 seem to have been allowed to stand unverified and uncorrected. My *Primula flava* is not *P. flava*, but *P. citrina*; my *P. cognata* is *P. stenocalyx*. Out of the tangle that envelops *Meconopsis rudis* and *M. racemosa* emerges the fact that my *M. rudis* of the Min S'an, Cambridge-blue, long-styled, creamy anthered, is neither the one nor the other, but a distinct species, *M. Prattii*. And of our last year's *Isopyrum grandiflorum* I will only now say that its waxen, whitish flowers, though very pretty, left me constantly wondering at the passionate admiration it had evoked from previous collectors, who had always described it as purple. This year has already brought me a shattering revelation of the truth.

In early May, even around Sining, not a flower was stirring except a fine violet *Oxytropis* in the river shingles and a queer little *Veronica* with the habit of *Gentiana Kurroo* on a much smaller scale. All the loess flats of this region are occupied by an *Iris*, just as kindred *Iris*es occupy all the other loess flats of China. But even this was barely showing a bud as yet. And how shall I dare talk of *Iris*es? With them I must go very cautiously, and deal very soberly, though not even to escape the polite reproach of "somewhat picturesque" can I promise, where I find a lovely living flower, to flatten it out in colourless, dull language, as if it were a dried specimen. This season, however, has been pleasantly fertile in *Iris*es. I am trying for photographs and paintings of all of them, and Mr. Dykes, I hope, will receive enlightening samples of them. Accordingly, for the present I will say no more of this abundant loess *Iris* till we come to the Halls of Heaven, except that it appears to me to be neither *I. ensata* nor *I. Farreri*, though replacing them in occupation of the loess. It was *I. ensata*, by the way, not *I. ruthenica*, which I noted as often flowerless. And so, in certain tracts—or, perhaps, in certain seasons—it did appear to me last year. *I. ruthenica* I only met with on one occasion, and the *Iris* I so unfortunately alluded to as *I. graminea* (I'm afraid, simply because it was grassy!) was also a sole occurrence, and does not seem to have been made into specimens at all. With regard to *I. goniocarpa*, I have already seen in this district how clearly my *I. "felina"* and *I. "pardalina"* are one species, as Mr. Dykes has shown; as my excuse for having separated them, though, I can safely urge that Thundercrown yielded two extreme divergences of the type, for the abundant specimens now in bloom on the Da Tung Alps are not so stiff in the purple-margined fall, not so clearly speckled with so velvety an intense violet on so waxen a ground of white; not so contrastingly lilac in standard and style; not so finely grassy in the leaf as *I. "pardalina"*; on the other hand, not so big in bloom, so squat in habit, so brindled, so generally blue in tone, so flopping in design as *I. "felina."* The Da Tung plant, then, presumably gives a general average from which the two Thundercrown forms diverged to either extremity, so remarkably that only botany could have suggested them the same species. In any case, *I. goniocarpa* is a treasure of the first rank, and ought to be easy of growth. Almost invariably it lives in fine grass dotted in and out of low scrub, and then is a frail thing of some four or five stems; but where it gets a patch of loose, stony vegetable mould to itself, as at one point on Thundercrown, it develops into a fine mass, lavishly bedecked with blossom. *Iris Henryi*, native, as I have seen it, to very coarse turf on very hot dry hills, has all the look of being difficult and hard to please, even if it did set seed freely (which I rather doubt) or if its running roots lent themselves to collection and re-establishment. However, the question is at present academic, as I fear we are too far north by now for *Iris Henryi*. What is its recorded distribution? *Reginald Farrer.*

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26, October 17 and 31, November 14 and 28, 1914, January 2, February 27, March 20, April 10 and 24, May 1, 15 and 29, June 12 and 19, and July 3 and 10, 1915.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LIII).

LE COMMERCE DES BANANES.

(Suite de la p. 287.)

Les Iles Britanniques ont importé, au cours des douze mois écoulés, 8,500,000 de régimes de Bananes, dont 6,000,000 des Indes Occidentales et de l'Amérique Centrale, et 2,500,000 des Iles Canaries. Il y a trente ans, l'importation totale ne s'élevait qu'à 10,000 régimes provenant des Iles Canaries. Ce n'est qu'en 1901 que la Banane de Jamaïque entra en ligne de compte. Grâce aux efforts d'une puissante firme, constituée par la fusion de compagnies qui avaient déjà acquis une expérience solide dans le transport et le débit de ce fruit, grâce aussi aux encouragements qui lui venaient du gouvernement et auxquels il a été fait allusion plus haut, elle prit rapidement une importance considérable.

La Banane des Canaries a néanmoins maintenu son renom. Elle arrive soigneusement enveloppée de paille ou de débris de feuille, dans un cageot cylindrique, dont les parois latérales, primitivement en bois, sont maintenant dans certains cas remplacées par une forte feuille de carton. Cet emballage permet d'amener, en excellente condition, les fruits qui, leur finesse aidant, réalisent des cours élevés, dont on estime la moyenne à 90 centimes la douzaine (marché de distribution). Les Bananes d'Amérique sont simplement empilées dans les bateaux, leur pelure est souvent tachée, leur goût est moins agréable. C'est un fruit plus populaire qui n'atteint pas les prix de celui des Canaries.

Ce dernier est cultivé avec énormément de soins. On recourt régulièrement aux engrais chimiques, ce qui augmente naturellement les frais à l'hectare mais assure en même temps une récolte plus élevée. En Amérique, le rendement, grâce au système des trois drageons, atteint cependant déjà 750 régimes par hectare et par an.

L'importance que le commerce présente ressort clairement des mesures que les principaux importateurs—les rois de la Banane, comme on les a appelés déjà—ont prises pour assurer un transport normal. Ils possèdent toute une flotte de grands steamers, exclusivement réservés au transport des Bananes. Ces steamers sont pourvus d'installations perfectionnées qui réduisent les risques au minimum. Ils transportent, en moyenne, 40 à 60,000 régimes par voyage. On avait constaté que le régime mur souffre énormément du transport, chaque heurt entraînant rapidement l'apparition de taches dans le fruit, qui dès lors perd une bonne partie de sa valeur marchande. Au contraire les chocs subis par les fruits non murs n'ont pas l'intérieur et provoquent simplement l'apparition de taches noires extérieures, sans que la pulpe soit affectée. Un fruit cueilli à l'état vert, mais à développement complet, continue sa maturation, et s'il est maintenu dans des conditions de température et d'aération favorables, sa saveur n'est guère diminuée. Dans ce but, les cales des navires sont chauffées, au cours du transport, à la température régulière de 14-15°. Dès l'arrivée au port, le déchargement se fait sans aucun délai; les 50 ou 60,000 régimes se trouvent sur wagons spécialement aménagés, dans un délai de 24 heures. Quelques heures après ils sont à destination dans toutes les villes importantes de l'Angleterre qui constituent chacune un centre de distribution. Là, de nouveaux locaux leur servent d'abri en attendant que les localités environnantes fassent leurs demandes, auxquelles satisfaction immédiate est donnée grâce à un service de camionnage intensif.

Les importateurs anglais ont aussi fait des efforts pour faire apprécier le produit sur le continent. Il y a quelque dix ans, beaucoup de grandes villes y connaissaient à peine la Banane. C'était un fruit de luxe, réservé aux plus aisés. Récemment encore on n'y voyait guère que la Banane des Canaries, dont l'emballage facilite la réexpédition. Le succès de l'organisation de la distribution des Bananes américaines en Angleterre a fait étendre les opérations à certaines villes du Continent. Les événements ne permettent évidemment pas de donner actuellement à ce commerce toute l'attention requise, mais l'affaire paraît assurée d'un succès complet.

Ailleurs on a cherché à s'affranchir de la tutelle de l'Angleterre et de la production de ses colonies. Peu de temps avant la guerre, un groupement de Hambourg avait décidé d'organiser l'importation du Brésil. Ce pays vendait déjà, en 1911, près de 3 millions de régimes à l'Argentine et à l'Uruguay. La réalisation du plan allemand n'est que reculée par suite du blocus.

Cette année on craignait que le commerce des Bananes américaines ne subit une crise, à la suite des ouragans qui ont détruit une partie de la récolte en Jamaïque. De fait les dernières importations marquent un déclin, mais moins important qu'on n'avait cru d'abord parce que l'Amérique Centrale (Costa Rica) comble une part importante du déficit.

NOUVELLES DIVERSES.

LE COMTE DE HEMPTINNE.—La nouvelle de la mort de M. de Hemptinne est confirmée, mais il s'agit de M. Paul de Hemptinne, condamné par un Conseil de guerre, à Gand, le 26 Octobre. Le jugement fut exécuté immédiatement après. Son frère Joseph de Hemptinne avait été condamné à mort auparavant, mais le jugement a été suspendu à la suite d'une intervention de Benoît XV. auprès du Kaiser.

LES LÉGUMES EN BELGIQUE.—Nous donnons ci-dessous, suivant des données de source allemande, un tableau des prix moyens réalisés au marché de Malines pendant le mois de septembre. Il est à remarquer que ces prix sont influencés par l'interdiction de l'exportation et que quelques-uns sont établis d'office par l'Obstzentrale.

	Les 100 kilos. frs.			
	1 ^{re} semaine.	2 ^e	3 ^e	4 ^e
Pommes de terre (rondes)	9	8	8	8
" " (longues)	11	10	10	10
Oignons	25	30	—	32
Carottes	25	25	—	25
Choux rouges ..	15	15	15	20
Choux blancs ..	15	15	15	17.50
Tomates	35-40	40	40	45
Haricots verts ..	40	45	45	50
Haricots princesses	40	40	45	50
Le cent. frs.				
Poireaux	4	4	4	4
Céleris	7	7	7	7
Laitue pommée ..	—	6	6	10
Choux de Milan ..	—	10	10	—

LES LÉGUMES EN ALLEMAGNE.—Il est de nouveau question, dans la presse, de la pénurie de vivres dans les états centraux. Les légumes y deviendraient très rares. La *Taegliche Rundschau* raconte que "dans le voisinage des grandes villes, on ralentit à dessein la culture des légumes, parce que les marchands ne veulent pas une baisse des prix. Ce serait un crime en tout temps. Mais qu'est-ce en un temps comme le nôtre?" Nous avouerons franchement qu'en temps de paix nous verrions avec plaisir une attitude pareille être adoptée par les maraichers lorsque les marchés sont congestionnés. Un peu plus d'attente entre producteurs serait souvent

profitable à la culture et au marché, sans provoquer l'exploitation du consommateur.

LE BOYCOTTAGE EN ALLEMAGNE.—Nous avons fait allusion déjà à la campagne menée en Allemagne contre l'emploi des produits horticoles de France et d'Italie. Beaucoup de bontiquiers recourraient sciemment à la production ennemie pour satisfaire aux demandes de la clientèle. Il faut croire que, de son côté, cette dernière ne se fait pas scrupule d'employer les produits du Midi. Les fruits français continuent même à jouir d'une vogue supérieure à celle des produits indigènes. Nous apprenons en effet, de source peu suspecte, que dans l'étalage d'un four-nisseur de la Cour de Berlin, les plus belles Pommes sont qualifiées de Calvilles françaises, bien qu'elles aient été cultivées en Allemagne. Lorsqu'on lui fit des remontrances, le marchand répondit: "Que voulez-vous, si je ne les affiche pas comme françaises, il m'est impossible de faire de gros prix!"

COMMERCE DE PLANTES AVEC L'AMÉRIQUE.—La Notice of Quarantine No. 19 du gouvernement des Etats-Unis d'Amérique porte une nouvelle entrave au commerce horticole transatlantique. En vue de prévenir l'introduction dans le territoire des Etats du cancer du Citronnier, l'importation de toutes les espèces de Citrus, plantes, boutures et graines, est interdite des provenances autres que celles d'Amérique.

LA FLEUR COUPÉE AU MIDI.—Une délégation de fleuristes du Littoral s'est récemment rendue à Paris et en Angleterre afin d'y étudier les moyens de mettre fin à la crise qui sévit dans la région floricole par suite du ralentissement de la vente. Il s'agit notamment d'augmenter la demande et d'assurer des transports rapides.

A ce sujet, notre confrère *le Jardin*, fait remarquer que l'état de guerre a rendu des marchés importants inabordable; de plus là où des envois peuvent être faits, la demande sera toujours, quoi que l'on fasse, influencée par les événements. La situation ne changera qu'après la conclusion de la paix, et en attendant il serait préférable d'engager les floriculteurs à réduire l'importance de leurs cultures et à tourner leur attention vers des produits pour lesquels une demande certaine et des prix rémunérateurs ne font aucun doute. D'une façon générale, la production agricole mérite d'être recommandée. En particulier, la culture maraîchère est tout indiquée pour relever les floriculteurs de la crise actuelle.

KORT OVERZICHT VOOR DE VLAMINGEN.

MEN heeft in de laatste jaren gezocht het verbruik van Bananen op het Vasteland meer algemeen te maken. Vroeger kwamen daar enkel Canarische vruchten die wel verpakt en dus goed bestand tegen het vervoer waren. Kort voor den oorlog is men ook begonnen met Amerikaanse Bananen.

Sommige landen wilden zich onafhankelijk maken van den Engelschen handel, en in Hamburg werd eene maatschappij gesticht met het oog op den aanvoer van Braziliaansche Bananen. Na den oorlog schijnt die poging te moeten slagen.

Ten gevolge van het uitvoerverbod en het toezicht van de Obstzentrale, blijven de prijzen voor groenten in België tamelijk laag.

Niettegenstaande den oorlog, behoudt het Fransche fruit zijne faam in Duitschland, want inlandsche appelen worden er nu voor Fransche verkocht.

OF THE FORMS OF FRUIT TREES.

I.—MEANS OF MODELLING.

THE forms which fruit trees assume or may be made to assume are assuredly without end, but there are certain shapes which appear to be reasonable and others which are too remote from nature. Whilst I do not pretend to have actually completed any forms or finished remodelling "badly" grown examples, a few words on the opinions I have formed from the study of plantations at home and abroad may stimulate attention to a matter which hardly seems to receive the thought that it deserves in this country.

Two main classes of training may be distinguished—(1) those farthest from nature, which are trained in the flat or in one vertical plane; and (2) those in a number of planes. The latter may again be divided into those which require no artificial supports and those for which guides are needed.

EQUALISING BRANCHES.

In order to rectify inequalities or to establish symmetry there are a number of simple plans whereby irregularities may be made to disappear. Suppose we have two or more shoots which are to be made equal in size and length, and the shortest of which is a third or a quarter the length of the longest, one or more of the following processes may be adopted:—

(1) Depression or elevation of the growing points; the effect of this simple means is little short of marvellous. In some cases retardation may be effected by looping a shoot as a loose knot on itself without tying down. Looping (French "bouclage," verb "boucler" or "arquer") is frequently used to promote the development of blossom-buds at the base of a shoot.

(2) Partial defoliation of the stronger shoots. With shears or knife some third, half, or two-thirds of each leaf, especially towards the growing end, is cut off.

(3) Linear incision. This is a cut made with a sharp budding knife just through the bark of the weak shoot from end to end, or less, according to circumstances; it should not penetrate the wood, and eyes should not be injured. March or early April is the time for making the incision, when the sap is rising.

(4) "Entaille." This consists in the removal of a small V, X, or crescent-shaped piece of bark below the attachment of too vigorous a shoot to check the sap reaching it, or of an inverted V or crescent above one whose growth is to be favoured. Personally I do not find this so effective as the above methods, and am somewhat prejudiced against unnecessary wounds.

(5) Partial annular incision or removal of a greater or less segment of a thin ring of bark on the shoot itself. I have a notion that ringing might be useful treatment for shoots which are to be used as grafts, on the analogy of Rose cuttings, but my first trial in such shoots are perhaps not yet safely rooted, though nonringed ones have not survived the year.

(6) Actual pruning back of the stronger shoot—repeated if necessary, perhaps to be regarded as a last resort.

STRAIGHTENING OR BENDING BRANCHES.

It may be desired to rectify the position or direction of an existing branch or shoot. If it can be bent and fixed in the required position early in the year when the wood is supple with rising sap, and retained by suitable ties and supports, it will keep its new position when the sap flow slackens, and the splinting may be removed about August. Care has to be taken in bending, say, a two- or three-year-old shoot lest breakage occur; by bending to and fro at the required site, slightly at first and then more and more, until sufficiently supple to gain the position desired, the needed amendment can often be attained. If, however, the branch is too rebellious or thick for such treatment, a bend may be made or a straightening of an existing bend

secured by the aid of a fine, sharp saw. I have used a blade such as is used for sawing bone or ivory in a bow-frame. During the grafting time of year a number of saw-cuts are made about half through the branch an eighth or quarter of an inch apart; some fifteen or twenty cuts may be needed to get the required position. The branch is firmly splinted to suitable supports and the surface treated with grafting wax. Naturally the cuts are made on what will be the concave side of the bend of an originally straight branch, and on the convex aspect of a curved bough which is to be straightened.

OBTAINING BRANCHES AT ONE LEVEL.

It is often necessary to obtain two or more branches at the same level. When only two are required there are several means, one of which will also give a greater number. So far as one can see from results, the only plan followed in this country is to select a place where two opposite shoots come off at about the same level and cut away the leader above them; as the upper one will get most sap some of the above equalising processes will be needed. According to several French authors (I have not tried the process personally) two such shoots may be levelled by cutting above the upper shoot into the main stem and splitting down till the attached portion of main stem comes off at the level of the lower shoot; a little piece of wood is placed in the cut to wedge it out so that the shoot assumes a horizontal position; the wound is coated with graft-



FIG. 108.—YOUNG STAGE OF DOUBLE U AT WAGONVILLE: THE FIRST MAIN BRANCHES FROM A PAIR OF STIPULARY EYES.

ing wax. (A simple cold grafting wax of German origin does well for coating such cuts or where heavy cutting has been done, but I do not much like it for actual grafting as some failures may be due to the action of methylated spirit as a constituent; about 80 to 90 parts of common rosin are melted with two or three of tallow; whilst still warm, but not too hot, methylated spirit is cautiously added and stirred well in to the consistency of thick treacle when cold. The addition of a very little linseed oil seems to be an improvement. The protection of wounds caused by heavy pruning is much neglected.)

A preferable method, the success of which is shown by several thousand double-U trained Pear trees I saw lately in Normandy, is to bend the leading shoot down to the horizontal opposite to and away from a bud at the required level; this bud is thereby caused to break and then the resulting shoot is equalised.

In the above methods the direct branches, as distinguished from stipulary ones, are employed to form the structural branches ("Charpente"). Lorette's method is to cut back leader and side shoots to throw sap into the latent stipulary eyes and cause them to break (see fig. 109); in order to avoid checking growth too much a sufficient amount is left to draw sap until the pair of stipulary growths are well established at the site desired. One of these is always stronger and earlier than the other, and equalising means have to be undertaken when both shoots are required, though it may be noted here that Lorette

prefers to make main structural stems from these shoots; in such case the stronger earlier one is cut back and the later one alone is used.

Closely allied to this method is the means of getting more than a pair of shoots at a given level, as, for instance, may be advisable in forming the true pyramid. It consists in awakening the latent eyes of the basal cluster of leaves and cropping back such resulting shoots as may not be required. The leading shoot is cut back, say, in April or early May to a suitable eye, with or without a splint piece or "onglet." When the new shoot has grown well and, to use Lorette's guide, has become as thick as a pencil, it is cut back to its basal leaf cluster; a number of shoots will then develop from which suitable ones may be selected. If a continuation leader is wanted a suitable one may be chosen and guided by the splint piece. If only two laterals are needed, two that are well placed are retained and the others cut back. For forming a "U," I am rather inclined to think that this plan may be preferable to Lorette's method, inasmuch as the main stem is nourished on both sides and thereby more rapid healing of the wound may be effected. My impression is that with the Plum type a more considerable number of shoots may be obtained, but I have no note of results obtained on two examples. An Apple tree thus treated gave seven off shoots last year. *Herbert E. Durham, Sc.D., M.B., F.R.C.S., President Herefordshire Association of Fruit Growers and Horticulturists.*

(To be continued.)

NOTICES OF BOOKS.

THE AMATEUR'S GREENHOUSE.*

THIS book makes appeal to amateurs, by which term is meant the thousands who know little or nothing of the art of gardening, but who are fond of it. It is, however, by no means easy to write a book on any subject for the ignorant. There are so many initial things, the alphabet, first steps, five-finger exercises to be learnt, without which progress must be slow and halting. The greenhouses one sees in villa gardens, looked after by the owner, what things of waste and disappointment they generally are! The fact is one must know a great deal about plants and their many requirements, and be able to give them almost hourly attention, to succeed in growing a collection in the span or lean-to house of 25 feet or so of the villa garden. Mr. Thomas's book will prove of considerable assistance in enabling the amateur to make a start with his greenhouse. He tells them what kind of house is best, how to fit it inside and heat it, and he sets before them a great variety of plants to choose from, giving directions for their cultivation. It would not be easy to supply the wants of Cyclamens, Exacums, Acalyphas, Luculias, Epiphyllums, Odontoglossums, Dendrobiums, Carnations and Auriculas in one greenhouse, though Mr. Thomas appears to believe it would. However, there is education in the attempt which does not succeed, and the persevering amateur who tries all the plants recommended ought to discover which are the best for him.

THE BULB GARDEN.

CROCUS SPECIOSUS BOWLES'S WHITE.

I HAVE flowered for the first time this autumn the very beautiful variety of *Crocus speciosus* named after Mr. E. A. Bowles. The variety appears more virile than *C. speciosus albus*, which I have never found very satisfactory. Mr. Bowles's variety has large blooms of good substance; they are white, shaded with faint blue when on first opening towards the base of the exterior. The interior is white, just touched with light purple lines at the base. *N. Arnott.*

* *The Greenhouse: Its Flowers and Management.* By H. H. Thomas. Price 1s. (London: Cassell & Co.)

THE ROSARY.

ROSES IN CANADA.

BULLETIN No. 85 of the Dominion Experimental Farms deals with the subject of hardy Roses and their cultivation in Canada. As the authors, Messrs. Macoun and Buck, point out, Rose gardens are rare in Canada, and yet there are many Roses that do well in the Dominion. Of these the rugosas and their hybrids, Austrian Briars, Provence, Damask and Moss Roses make up the hardest section. In the next group come H.P.'s, Climbing Multifloras and Dwarf Polyanthas. Roses of the third degree of hardiness are H.T.'s and Austrian hybrids (Pernetianas), and Teas come in the fourth class. Those of the first group are found to require little or no protection in most parts of Canada. The others must have protection, except in very favoured localities.

ROSE AUDIT IN SCOTLAND.

A ROSE plebiscite has lately been arranged by the *Glasgow Citizen* among its readers. Compared with a similar effort made two years ago, a greater response has been made on the part of readers, who have commented freely on the good qualities and defects of the different varieties they have grown. Apparently mildew is an ever-present source of trouble, varying in extent according to weather and locality. The absence of fragrance in specimens that possess good colour and form is a common cause of complaint, and for that reason many of the voters prefer older sorts to recent introductions which are almost scentless.

One or two varieties are found in almost every collection. For instance, Mrs. David McKee and Lady Pirrie in their respective classes were placed first with a preponderance of votes over all other kinds.

Taken as a whole, the Garden and Exhibition 12 may not meet with general approval, but the results reflect the views of a number of amateur rosarians, whose conditions and methods of cultivation vary according to practice and locality. In many cases Hugh Dickson was preferred to George Dickson, because the blooms of the latter variety have a drooping tendency, and plants are subject to mildew. The position of Lyon Rose so high up in the list is difficult to explain, while the inclusion of Gloire de Chédane Guinoisseau is indicative of recognition of the merits of the red Hybrid Perpetual.

The decorative collection would meet with more general confirmation. Two of the old favourites, Madame Ravary and Madame Abel Chatenay, are popular, and the fine qualities of La Tosca are also acknowledged. Probably Madame Edouard Herriot occupies a lower place in the list than it deserves.

A good many contributors did not include Pillar Roses in their papers, and those who did make a selection found it difficult to limit the number to six.

Of the new Roses, Mrs. Wemyss Quin and H. V. Machin were by general consent regarded as the best introductions of last season, while Augustus Hartmann, Mrs. Geo. Norwood and Iona Herdman were well spoken of by those who had grown these novelties.

The results of the voting in the various classes are as follows:—

GARDEN AND EXHIBITION.

Mrs. David McKee H.T. (Alex. Dickson).—Creamy-yellow.

Hugh Dickson H.P. (Hugh Dickson).—Crimson, shaded scarlet.

Lyon H.T. (Pernet Ducher).—Salmon-pink shaded chrome-yellow.

Caroline Testout H.T. (Pernet Ducher).—Satin-rose.

Madame Mélanie Soupert H.T. (Pernet Ducher).—Salmon-yellow suffused carmine.

Frau Karl Druschki H.P. (Lambert).—White.
Mrs. John Laing H.P. (Bennett).—Soft pink.
George Dickson H.T. (Alex. Dickson).—Dark scarlet crimson.

Lady Ashtown H.T. (Alex. Dickson).—Carmine-pink shading to yellow.

Mrs. Foley-Hobbs T. (Alex. Dickson).—Ivory-white tinged with pink on edge of petals.

Mrs. W. J. Grant H.T. (Alex. Dickson).—Pink.

Gloire de Chédane Guinoisseau H.P. (Chédane Guinoisseau).—Vermilion-red shaded velvet.

Next came Lieutenant Chauré, G. C. Wand, Ulrich Brunner, Horace Vernet, Avoca, Ferniehurst, Arthur R. Goodwin, Marquise Litta, Dr. O'Donel Browne, Königin Carola and Marie Adelaide, while Miss Cynthia Forde had a place in each list.

DECORATIVE.

Lady Pirrie H.T. (Hugh Dickson).—Deep coppery-salmon, shaded apricot-yellow.

Duchess of Wellington H.T. (Alex. Dickson).—Saffron-yellow, stained crimson.

General MacArthur H.T. (Hill).—Bright crimson.

Madame Ravary H.T. (Pernet Ducher).—Orange-yellow.

La Tosca H.T. (Schwartz).—Silvery-pink.

Pharisaër H.T. (Hinner).—Rosy-white shaded salmon.

Madame Abel Chatenay H.T. (Pernet Ducher).—Carmine-rose, shaded salmon.

Harry Kirk T. (Alex. Dickson).—Primrose yellow.

Dorothy Page Roberts H.T. (Alex. Dickson).—Coppery-pink, suffused apricot-yellow.

Betty H.T. (Alex. Dickson).—Coppery-rose, shaded golden-yellow.

Madame E. Herriot A.B.H. (Pernet Ducher).—Coral-red, shaded yellow.

W. E. Lippiatt H.T. (Alex. Dickson).—Crimson.

Richmond and Gustav Grünerwald tied for 13th place, and were followed by Joseph Hill, Earl of Warwick, Prince de Bulgarie, Lady Hillingdon, Miss Cynthia Forde, Marquis de Sinéty, Viscountess Folkestone, Irish Elegance, Red Letter Day, Sunburst, Mrs. Walter Easlea and Paul Lédé.

PILLAR.

Madame Alfred Carrière (Schwartz).—White.
American Pillar (Conrad).—Pink.

Gruss an Teplitz (Geschwind).—Scarlet crimson.

Dorothy Perkins (Perkins).—Light pink.

Hiawatha (Walsh).—Brilliant scarlet.

Madame Hector Leuillot (Pernet Ducher).—Golden-yellow tinted with carmine.

Then follow Dorothy Dennison, Sanders' White, Ards Rambler, Lady Gay, Conrad Meyer, Excelsa, Zéphyrine Dronhin and Tausendschön.

NEW ROSES.

Mrs. Wemyss Quin H.T. (Alex. Dickson).—Deep canary-yellow.

H. V. Machin H.T. (Alex. Dickson).—Scarlet crimson.

Naarden H.T. (Van Rossem).—Creamy-white, with salmon-yellow centre.

Augustus Hartmann H.T. (Cant).—Pelargonium-red flushed orange.

Mrs. Geo. Norwood H.T. (Hicks).—Pink with yellow at base.

Iona Herdman H.T. (McGredy).—Orange flame.

Next in the order of voting were Countess Clanwilliam, Mrs. James Lynas, Colleen, Red Letter Day and Mrs. Charles Russell.

A plebiscite of this nature yields results which are of considerable value, especially to the amateur Rose grower, in that it shows, not necessarily the best Roses, but those which are easiest to grow and give the most satisfactory results in the garden of the amateur.



THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

ODONTOGLOSSUM CITROSIMUM.—The season's growth of this *Odontoglossum* will soon be completed, and the amount of water at the roots should be decreased gradually until it is almost entirely withheld. The pseudo-bulbs will shrivel, but this will not harm the plants, and they will soon regain their rigidity when water is applied more liberally as the flowering season approaches. In such treatment they usually produce plenty of flower-spikes. *O. Reichenheimii* should enjoy a long period of rest; only sufficient water is needed to keep the pseudo-bulbs plump.

CATASETUM, MORMODES AND CYNOCHES.—Plants of these genera that have passed the flowering stage and finished their growth should be placed in a cooler house. Specimens that have shed their leaves will only require water at long intervals, but for so long as the plants retain their foliage water should be afforded once or twice weekly.

LYCASTE.—Some of the *Lycastes* have almost completed their season's growth, and some, including *L. Skinneri*, *L. S. alba*, and *L. aromatica*, will soon be pushing up flower-spikes. After flowering the plants should be rested, but sufficient water must be afforded to keep the leading pseudo-bulbs plump. With one or two exceptions, all the *Lycastes* thrive in a cool house. Plenty of light is necessary, and air should be admitted whenever the weather is favourable.

COELOGYNE CRISTATA.—This desirable plant and its varieties *hololeuca* and *Lemoniana* have finished their growth and some of the plants are pushing up the new shoots from which the flower-scapes appear. To secure flowers free from spots, the atmosphere should be kept moderately dry, and, in watering the plants, care must be taken to prevent moisture wetting the blooms. By placing a few plants in a warm house at intervals of a month, a supply of flowers can be maintained for three or four months. Plants that still remain in the cool division will only need water at rare intervals, the atmospheric moisture being almost sufficient to keep them healthy.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

MORELLO CHERRIES.—The trees may be pruned and trained, but before doing this cleanse the wood thoroughly to destroy insect pests and their eggs. The prunings should be at once gathered and burnt.

PLUMS AND CHERRIES.—Trees planted now will develop fresh roots before the winter and will break into growth stronger in spring than those planted later this year or next spring. Some seasons are more favourable for early planting than others, and the autumn this year is very favourable. In cold, wet autumns the wood is seldom sufficiently ripened by now to commence planting, which is then best deferred for a time.

FIGS ON WALLS.—The ripening of the wood will be assisted by the prompt removal of all unnecessary growths, for although it is somewhat late in the season to do this, it will prove beneficial to the remaining branches. Where the planting of fresh trees is contemplated the work should be no longer delayed, otherwise it would be better deferred until the spring, when trees should be selected that have been grown in pots for the purpose. The most suitable varieties for outdoor cultivation are Old Brunswick, Brown Turkey, White Marseilles and Negro Largo. The last requires a warm situation and a restricted root run. In all cases the shoots of Fig trees should be trained very thinly. The soil in which Figs are planted should not be of a very rich nature, and the roots should be

restricted from growing freely by limiting the border or occasional pruning. Choose the warmest position in the garden for the trees.

THE FRUIT ROOM.—Examine the stocks of Apples and Pears in the fruit room, and remove all fruits that show signs of decay. Maintain a cool, airy atmosphere and a temperature of 40° to 45°. Disturb the fruit as little as possible whilst making the examination.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

FRENCH BEANS IN POTS.—Beans raised from seed sown a month ago will be benefited by a top-dressing of loam and decayed horse manure made moderately firm by pressing with the hand. Place a few twigs in each pot to keep the shoots upright. A plentiful supply of water should be given while the plants are growing freely, and the foliage may be syringed lightly twice daily during bright weather. Plants in pots from which pods are being gathered should receive a liberal supply of manure water, and the foliage should be syringed freely to keep red spider in check. Make another sowing of dwarf Beans in 7-inch pots and germinate the seeds in a temperature of 65°. When the seedlings appear stand the pots near the roof-glass.

LETTUCE.—In order to make certain of a supply of Lettuce in winter all late plants which are in the open and showing signs of hearting should be carefully lifted and transplanted in cold pits. Water the roots copiously before lifting the plants, and again after they are planted, to settle the soil about the roots. Ventilate the pit freely and watch carefully for slugs. The soil in which young Lettuces are growing should be kept free from weeds. Dust the rows frequently with lime, and endeavour to keep the plants sturdy until the spring, when they should be transplanted on a warm, south border. Lettuce plants which are ready for cutting should be afforded protection from frost.

PARSLEY.—Parsley plants have made an unusual amount of leaf-growth this autumn, and will require protection from severe frosts. The overgrown foliage must be removed in order to encourage young, stocky leaves to develop, for these withstand the winter better than those which have fallen over and are in contact with the soil. In fine weather hoe the soil in the rows. Plants in pits should be divested of all decaying leaves, and left uncovered as late in the season as is safe.

FRUITS UNDER GLASS.

By JOHN HIGGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

PRUNING AND CLEANSING VINES.—Successional Vines should be pruned forthwith, for early pruning is essential to the well-being of the Vines, as it ensures them having a complete rest, and further movement of the sap will assist in plumping up the buds that are left. It should be remembered that basal buds are usually the best matured, but make sure before pruning that this bud is well developed, as if weak the resulting growth will not give a shapely bunch of Grapes. Therefore it will be advisable to disregard any hard and fast rule and prune to a suitable bud. A number of the long, unsightly spurs on old Vines should be cut well back to the rod, trimming the wound with a sharp knife. Provided the roots are in a satisfactory condition there need be no fear of the Vine not breaking into growth from the rod. After pruning rub off all the loose bark and then wash the rods with an insecticide, using a half-worn painter's brush. Thoroughly wash all the wood-work of the house with fairly warm water and soap and brush the wires with paraffin. Lime-wash the walls afresh, adding a little sulphur to the wash. Remove an inch or more of the surface soil from the border and replace it with fresh material. The present time is opportune to attend to the renovation of unsatisfactory borders. One of the surest signs of a defective border is persistent shanking of the berries. Where the roots are growing in an outside as well as an inside border the former should be treated first, but on no account should both be

disturbed the same season. In most cases it will be found that the roots have penetrated deep into the soil, so that the only remedy is to take a trench out at the extreme end and carefully remove the soil to the stem of the Vine. Meantime carefully protect the roots with damp mats, and, before proceeding further, examine the drainage and see that this is in good order. After having covered the drainage with a layer of fresh turves placed grass-side downwards, the subsequent treatment will be similar to that of making a new border. Proceed to make up the border with a suitable compost, which should vary slightly according to the variety to be treated. In replanting arrange the roots near the surface in layers. Cut away damaged roots, and any that are long and bare of fibres. After such drastic treatment it will be necessary to soak the border thoroughly with clear water in order to settle the soil amongst the roots. The work is completed by applying a mulch of light manure over the whole border.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

LILIUM HARRISII.—To have the different forms of this beautiful Lily at their best, and especially if blooms are required early, the bulbs should be potted as soon as they are received from the nursery, for they are generally well ripened by now, and the longer they remain out of the ground after this period the more they become weakened. When potted they should be placed in a cold frame or similar place, and watered very sparingly until the roots are growing freely. The date at which these early potted bulbs will flower depends upon the treatment afforded them. If only just protected from the frost, and afterwards treated as cool greenhouse plants, they will flower in June and July. By this it will be seen that, with careful management, a succession of flowers may be maintained for a long period.

GESNERA.—These plants have not only beautiful flowers, but handsome foliage. The season of the year in which they will bloom depends upon their treatment; the flowers are especially welcome in autumn and winter. The plants are of easy cultivation, needing much the same treatment as Gloxinias; if they have been treated in the manner described in previous calendars they will flower from August to Christmas. At this season most of the Gloxinias are over, and Gesneras are useful to carry on the succession. Gesnera cinnabarina, G. exoniensis and older G. zebrina all have beautiful flowers and handsome foliage, which render them very attractive during the dull days of winter. A moderately moist atmosphere and a night temperature of 60° are suitable conditions in which the plants will flower. After the flowering is over withhold water from the roots gradually, in order that the crowns may ripen thoroughly.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

ORNAMENTAL TREES AND SHRUBS.—There is a large choice of beautiful trees and shrubs, and many improvements on old varieties have been introduced in recent years. This has been most marked with Syringas (Lilacs), Philadelphus, Deutzias, Viburnums and Hydrangeas. A list of a few of the best Lilacs was given on p. 343. Beautiful varieties of the popular Philadelphus include P. Conquète, P. Fantaisie, P. Bouquet blanc, P. Virginal and P. purpureo-maculatus. Of Deutzias a few of the best are D. Veitchii, D. crenata magnifica, D. discolor densiflora, and D. Wilsonii. Viburnum Carlesii is a distinct acquisition, and V. tomentosum Mariessii, and V. rhytidophyllum should be included in the collection of shrubs. These are early summer bloomers, and can be supplemented by Rhododendrons, including Azaleas, Andromedas, Weigelas, Halesias, Laburnums, Styrax japonica, and Olearias. A wealth of good plants may be chosen for spring blooming from Magnolias, Forsythias, Ribes, Pyrus, Almonds, Berberis, Cytisus, Spiraeas, Amelanchier (Snowy

Mespilus), and the Japanese Cherries. The last are among the most beautiful of flowering trees; a selection includes Cerasus J. H. Veitch, C. serrulata, and C. Watereri. For flowering in July and August, plant Buddleias, Ceanothus, Escallonias, Veronicas, Spiraeas, and Tamarisk, whilst in warm localities Clethras, Hydrangeas, Desfontainea spinosa, and Myrtus Luma may be added. The last is a beautiful, white-flowering shrub, and the blooms are followed by reddish-black fruits. The following carry the succession of flowers into September:—Hydrangea paniculata grandiflora, Sambucus canadensis, Clerodendron trichotomum, and Arbutus Unedo, the Strawberry tree.

AUTUMN TINTS.—In any scheme of tree and shrub planting subjects which give a more or less brilliant foliage effect during the autumn should be included. Leaf-colouring is very fine this season: a few of the most striking plants are Quercus coccinea splendens (the Scarlet Oak), Parrotia persica, Liriodendron tulipifera (the Tulip tree), and Japanese Maples, of which Acer palmatum Osakasaki is the most brilliantly coloured, although A. p. vitifolium, A. p. atropurpureum, and A. p. palmatifidum are all very handsome. The common Azalea pontica never fails in its brilliancy of autumn colouring, and Pyrus arbutifolia, which is over, was most attractive. Euonymus alatus is variable, being more richly coloured in some soils than in others. The various kinds of Rhus are good, as is also Amelanchier canadensis (Snowy Mespilus), Viburnum Opulus, Spiraea Thunbergii, S. opulifolia aurea, Hamamelis, Berberis Thunbergii, Enkianthus, and Rosa rugosa. Among climbers, Ampelopsis Veitchii, the Virginian Creeper, Vitis Thomsonii, V. Thunbergii, and V. Henryana, have conspicuously beautiful foliage.

THE "FRENCH" GARDEN.

By P. AQUINAS.

OLD MANURE BEDS.—Late Carrots have been marketed, and the black soil should be turned over as was done previously where the early Celery grew. The whole space should be again turned over within ten or twelve days, and a week or so after this second turning one-third of the quantity of soil carted away, one part to be kept for top-dressing beds during the spring and the other part to fill up the frames intended for the crops grown without heat. The necessary quantity of manure for making hot-beds next January and February should be collected at once. Eight tons for every bed of fifteen lights is a good average quantity, and allowance should be made for the lining of the paths between the frames laid down to cold work and also for the making of hot beds for rearing seedlings in the spring. Stack the manure in a heap 12 to 14 feet wide, the length varying according to requirements. The size of a 100 tons stack is about 14 feet by 25 feet. The heap should be raised up to 10 feet, and chimneys placed in the centre to draw and facilitate the escape of the gases and steam of fermentation. Such method of stacking eliminates the danger of decay, and keeps the manure dry until it is needed.

COLD WORK.—It is necessary to plan out the crops and the number of plants for the cold beds before allotting the ground for the purpose. Radishes and Cabbage Lettuces are only to be considered as catch crops, while Cos Lettuces, Carrots, Turnips, Cauliflowers and Vegetable Marrows will be the main crops to succeed them. In mixed gardens the frames can be utilised after the marketing of the catch crops by the end of April, for growing Chrysanthemums, Stocks, Asters or annuals for cut blooms and even bedding plants. In some establishments a certain number of frames is kept purposely for an early batch of Melons to be planted in the middle of March, but the price this year for Melons has been so small as to discourage the most enthusiastic grower. The ground should be heavily manured, dug deeply during November, and allowed to stand fallow until Christmas. The frames occupied at present with the winter crop of Lettuces will be at liberty about the same period. They will be available again for cold work without being disturbed.

EDITORIAL NOTICE.

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, NOVEMBER 15—
Nat. Chrys. Soc. Executive and Floral Coms. meet.
THURSDAY, NOVEMBER 18—
Manchester and N. of Eng. Orchid Soc. meet.
FRIDAY, NOVEMBER 19—
B.G.A. (South London Branch) meet. Scottish Hort. Assn. Chrys. Show, Waverley Market, Edinburgh.
SATURDAY, NOVEMBER 20—
Morley and Dist. Paxton Soc. Chrys. Show.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 42.6.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, November 11 (10 a.m.); Bar. 29.6. Temp. 45°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY—
Dutch Bulbs, by Protheroe & Morris, 67 and 68, Cheapside, at 10.30.
MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Perennials and Bulbs, at Stevens's Rooms, 38, King Street, Covent Garden, at 12.30 p.m.
MONDAY—
Clearance sale of Fruit Trees and Shrubs at Osterley Park Nurseries, Windmill Lane, near Hanwell, by Protheroe & Morris, at 12.
TUESDAY, WEDNESDAY AND THURSDAY—
Nursery Stock at Waterers' Nursery, Bagshot, by Protheroe & Morris, at 12.
WEDNESDAY—
Trade sale Miscellaneous Bulbs at 1, Japanese Lilies at 3, Palms and Plants at 4, by Protheroe & Morris, 67 and 68, Cheapside, E.O.
THURSDAY—
Roses by Protheroe & Morris, at 1.
FRIDAY—
Roses by Protheroe & Morris, at 3.

Endemism and Evolution.

The phanerogamic flora of the tropical island of Ceylon is very well known, and therefore affords data almost unequalled for statistical investigations and comparisons. Ceylon has engaged the attention of botanists from Burmann (1737) and Linnaeus (1747), through successive Directors of the Botanic Gardens down to Dr. J. C. Willis, who continues his studies in the paper the title of which is given below.* Incidentally, it may be mentioned that Ceylon is about half the size of England, with mountains rising to an altitude of about 8,000 feet, and the latest statistics of the phanerogamic flora are: 2,809 species belonging to 1,027 genera and 149 families. Dr. Willis's discussion of the endemic or peculiar element is highly interesting; though he starts on the erroneous assumption that Ceylon "contains an immense endemic flora, which enables it to rank with many oceanic islands: even the Sandwich Islands have not so many." He himself places the total number of endemic species at 809, which works out to 28.8 per cent., and, it may be added, only 23 genera are peculiar to the island. Willis's statement in relation to the Sandwich Islands is not qualified in any way by com-

parisons of area or other factors. As a matter of fact, the generic and specific endemic elements in the flora of Ceylon are small relatively and positively, whether we compare them with those of a large area, such as the whole of India, or a smaller area, such as that of the Sandwich Islands. The percentage of endemic species in the flora of India is approximately sixty, in that of Central America seventy, and in that of the Sandwich Islands upwards of eighty. The highest degree of endemism, excluding small insular floras, such as that of St. Helena, obtains in West Australia, where it approaches eighty-five per cent. It is true that the flora of Ceylon comprises a larger number of endemic species of flowering plants than the Sandwich Islands; but it must not be forgotten that the total number of species in the former is four times that in the latter. However, these proportions do not affect the author's arguments in relation to endemism and evolution. His main point is that the endemic species are, on the whole, much rarer than those of wider distribution, and that this fact is apparently destructive of the theory of natural selection and adaptation. For purposes of comparison Dr. Willis groups the species under three heads, namely, endemic to Ceylon, common to Ceylon and Peninsular India, and those of wider distribution. Then, in relation to commonness, he follows Trimen in classifying each group under six degrees of rarity, beginning with "very common" and ending with "very rare." The results are exceedingly interesting and suggestive, and we reproduce his opening tabular view of the number of species in each group and class:—

	Endemic in Ceylon.	Restricted to Ceylon and Peninsular India.	Of wider distribution.
Very common ...	19	45	221
Common ...	90	118	462
Rather common ...	139	103	313
Rather rare ...	136	84	209
Rare ...	192	64	159
Very rare ...	233	78	144
	809	492	1,508

Dr. Willis's deduction from this and other statistical data is that the endemic element has not developed "in any kind of advantageous response to local conditions, as must have occurred did natural selection obtain." The table shows that the endemic species increase in numbers from "very common" to "very rare," more than a quarter coming under the latter category, whereas those of wider distribution increase in numbers in the inverse direction. Degree of commonness Willis regards as the criterion of age. Thus the endemic element in the flora would be the youngest of the three series. The subject of evolution and distribution is so complex that we will only suggest that the converse might afford an equally probable explanation of the present conditions. Many endemic types now exist only in very small numbers. *Colinus elon-*

gatus is given as an example of one that "must have evolved on the summit of Ritigala, where it exists as about a dozen individuals, and cannot ever have been much more numerous." We agree with the author that natural selection has not played an important part in the present distribution, and the term "survival of the fittest" is not a happy one.

The present vegetation of New Zealand offers a striking example of the changes effected by a foreign element. Upwards of 600 species of foreign flowering plants are now more or less completely naturalised in New Zealand, and competing with the native plants for existence. In some localities introduced plants have completely ousted the native vegetation. At least 75 per cent. of the native species of flowering plants and Ferns are peculiar, and they comprise every type of vegetation, from the lowliest herb to the loftiest tree. Many are common throughout the islands in suitable altitudes. Numerous others have hitherto been collected in only one locality and may be classed as rare, though future explorations may reveal a wider distribution of some of these. Now it is well known that the presence in New Zealand of many plants of wide distribution is of comparatively recent date; yet in many localities they are rapidly replacing the endemic plants. The late Thomas Kirk was a keen observer and recorder of biological phenomena in New Zealand, and he emphasises the fact that such robust native plants as *Phormium tenax*, *Cyperus ustulatus*, *Aciphylla squarrosa* and *Pteris esculenta* are displaced by European Grasses and Clovers. This is probably in part due to augmented vitality and fertility in "fresh soil." The endemic element of the New Zealand flora presents some very curious features in its composition, including, possibly, many of the oldest species, as well as the youngest, and some of the rarest as well as some of the commonest species; many belonging to genera of world-wide range; many to endemic or exclusively southern genera.

PYRUS SARGENTII, REHDER.—The showy *Pyrus* illustrated in fig. 109 was first discovered by Professor SARGENT in 1892, when collecting in Japan. It belongs to the *Malus* section of the genus, one of its nearest allies being *P. Toringo*. Flowering sprays of the plant received the R.H.S. Award of Merit at the Chelsea Show on May 18 this year, and were illustrated in *Gardeners' Chronicle* (fig. 95), May 29, 1915, page 291. Had fruiting sprays been exhibited this autumn the increase of the award to a First-class Certificate by the Royal Horticultural Society might have been considered, as the fruiting tree is very attractive. *P. Sargentii* is of bushy growth some 4 or 5 feet high, and probably more; the leaves are 2 to 3 inches long, and almost as much wide, three (rarely five) lobed; the margins are sharply toothed; the flowers are white, an inch across, on stalks one inch long; they are borne in clusters of about four to seven on short axillary growths. The fruits are small and Cherry-like, bright red in colour, $\frac{1}{2}$ to $\frac{1}{4}$ inch in diameter: the bushes fruit freely. As a small bush for planting on lawns this Japanese Crab promises to be a useful addition in gardens. Seeds provide the best means of propagation.

* "The Endemic Flora of Ceylon, with Reference to Geographical Distribution and Evolution in General," by J. C. Willis, M.A., Sc.D., *Philosophical Transactions of the Royal Society of London*. Series B, Vol. CCVI., pp. 307-342. 1915.

ROYAL METEOROLOGICAL SOCIETY.—A meeting of the Royal Meteorological Society will be held at 70, Victoria Street, Westminster, on Wednesday, the 17th inst., at 7.30 p.m., when the following papers will be read: (1) "The Mounting and Illumination of Barometers and the Accuracy Obtainable in the Readings," by J. S. DINES, M.A.; (2) "On the Seasonal Variability of Rainfall over the British Isles," by N. A. COMISSOPULOS.

CROYDON HORTICULTURAL SOCIETY'S GIFT OF PLANTS.—About 300 Rose trees have been presented to the Park Hill Recreation Ground, Croydon, by nurserymen members of the Croydon Horticultural Society, by way of recognition of the facilities provided by the park authorities for the holding of exhibitions in the grounds. A label is to be placed in each bed, giving the name of the variety of Rose and the name of the donor.

COVENT GARDEN LIFEBOAT FUND.—The Committee of the Covent Garden Lifeboat Fund appeals for funds to maintain the "Covent Garden" Lifeboat at Caister, near Great Yarmouth. The boat has done good service for several years, and since the beginning of the war has rendered valuable aid to the Royal Navy, military transports, and minesweepers. The secretary is Mr. B. J. MONRO, Covent Garden, London.

RECRUITING AND FARM LABOUR.—The President of the Board of Agriculture and Fisheries desires to call the special attention of farmers and agriculturists generally to the new arrangements made under Lord Derby's recruiting scheme whereby men can either enlist for immediate service with the colours or can be attested, grouped according to their age and condition, i.e., married or single, passed at once into Section B, Army Reserve, and returned to their civil occupation. Lord Selborne strongly advises skilled agricultural workers whose labour is really indispensable on the farms but who yet may feel a strong impulse to join the Army that they should not attempt to enlist for immediate service, but that they should be attested and passed into the Reserve, and he recommends farmers and all who have influence over such men to persuade them to adopt this course, while encouraging the immediate enlistment of men who are not indispensable. Indispensable men so attested will never be called up for service without an opportunity being given through the local tribunals set up by the Local Government Board for consideration whether they ought not to be retained on the farms, and meanwhile they will be entitled as soldiers in the Reserve to wear a khaki armlet which will be given to them by the military authorities. The matter is of urgent importance, in view of the Martinmas hirings, when men will be for the moment unemployed and when special efforts will doubtless be made by the recruiting officers to obtain recruits for the Army.

FERTILISERS COMMITTEE.—The President of the Board of Agriculture and Fisheries has appointed a Departmental Committee to make arrangements with a view to the maintenance, so far as possible, of adequate supplies of fertilisers for the use of farmers in the United Kingdom. The Committee is constituted as follows:—Chairman, the Right Hon. F. D. ACLAND, M.P., Parliamentary Secretary to the Board of Agriculture and Fisheries, Messrs. R. H. REW, C.B. (Board of Agriculture and Fisheries), T. H. MIDDLETON, C.B. (Board of Agriculture and Fisheries), G. J. STANLEY, C.B., C.M.G. (Board of Trade), J. DUNDAS WHITE, M.P. (Scottish Office), H. ROSS SKINNER (Ministry of Munitions), E. J. FOLEY (Admiralty), and R. J. THOMPSON (Board of Agriculture and Fisheries), Secretary, Mr. H. D. VIGOR, 3, St. James's Square, London.

SEEDS AND PLANTS BY POST.—We learn that the Postmaster-General is unable to consent to the commercial distribution of seeds

through the sample post. This, we fear, may mean a serious loss to seedsmen. It is the more disappointing in that the Horticultural Trades' Association, ably assisted by Mr. ARTHUR SUTTON, has worked most strenuously in order to obtain this concession.

REGISTRATION OF DAFFODIL NAMES.—The Classification Sub-Committee of the Royal Hor-

those who wish to have their newly-named varieties included in the new classification list should apply at once for registration forms to Mr. C. H. CURTIS, hon. secretary, R.H.S. Narcissus Committee, Adelaide Road, Brentford, Middlesex.

A NEW BEGONIA FROM MADAGASCAR.—Mr. BOIS describes in the *Revue Horticole* (June, 1915) a new Begonia with deco-



[Photograph by E. J. Wallis.]

FIG. 109.—FRUITING SPRAY OF PYRUS SARGENTII.

(See page 308.)

ticultural Society's Narcissus and Tulip Committee will meet at an early date for the purpose of revising the "Classified List of Daffodil Names" prior to a new issue of that useful publication. Varieties registered since the issue of 1914 will be included in the new edition. Raisers and distributors are reminded that the registration fee is 2s. 6d. each variety, and

native foliage named B. Perrieri. Specimens were raised from seed collected in an unknown locality in Madagascar by Mr. PERRIER DE LA BATHIE. Plants grown in the houses of the Natural History Museum in Paris flowered at the end of October, and proved themselves to belong to the section *Quadrilobaria* (de Candolle). B. Perrieri is

glabrous, except on the upper surface of the leaves. Mr. Bois predicts that the new species will prove an acquisition on account of its decorative foliage. The leaves are caducous, with laminae from 6 to 8 inches long and about as broad. The veins on the upper surface are tinted with red-violet, and the parts of the leaf neighbouring the veins are of a dark green, almost black colour enclosing zones of lighter colour; the latter are yellowish-green in the young, and golden-yellow or yellow-bronze in the adult leaves. The lighter areas, which are raised, are covered with numerous small white hairs. The lower surface of the leaves is smooth, and of a red-violet colour. The flowers are white and small. After the flowering season the leaves turn yellow and fall, and the suffrutescent stem remains bare during a resting period which lasts till March or April. The plant requires a warm house, and is propagated by stem cuttings. It has not yet ripened seed.

WAR ITEMS.—Mr. E. A. BUNYARD has received a card from M. CHASSET, secretary of the Société Pomologique de France, who has been at the front since the war started. He is well, and asks for information as to the work that English writers have done in the way of classification of fruits. He is about to publish a new system which he has completed during his leisure hours.

— On the outbreak of war twenty members of the garden staff at Cliveden, Buckinghamshire, joined the Royal Bucks Regiment. Of these GEORGE JEWELL, fruit foreman, JOHN H. ABBEY, outside fruit foreman, OWEN GRAY and JOSEPH PHELPS, journeymen, have been killed. Mr. A. DANCE is a prisoner of war at Erfurt.

— Sgt. G. REVENS, 6th Lincolns, died at Tooting Military Hospital on the 29th ult. He was invalided home from the Dardanelles suffering from enteric fever, and died the day after he arrived. Before joining the Army the late Sgt. REVENS was employed as a journeyman at Osberton Gardens, Worksop.

NURSERY FIRM'S SUCCESSFUL ACTION.—Messrs. J. CARTER AND CO., Raynes Park, were successful in a recent law suit in which they claimed the sum of £138 13s., representing the balance of an account for work done and materials supplied in making a golf course at Merton Park, Surrey. The Committee of the golf club denied liability on the ground that the site was not properly drained, but it was shown that Messrs. CARTER's had not undertaken to do this part of the work. Notice was given of appeal.

PLANTS RECENTLY INTRODUCED INTO U.S.A.—The inventory of seeds and plants imported into the United States from January 1 to March 31, 1913, contains names and descriptions of many plants of horticultural as well as agricultural interest. No. 34,856, *Hex corallina*, Franchet, one of WILSON's Chinese plants, is a spineless Holly with slender branches and leaves from 4 to 5 inches in length. It forms a very graceful shrub of about 12 feet high, and bears coral-red fruits. Writing in the *Revue Horticole* some years ago, M. LÉON CHÉNEAULT predicted that it would prove hardy at least in Central France. *Leptospermum scoparium*, Foster (No. 34,853), which was presented to the Bureau of Plant Industry by the Rev. A. T. BOSCAWEN, is a red-flowered New Zealand plant known from the discoverer as Nicholls's Manaka. Plants obtained by Mr. NICHOLLS, of Belfast, New Zealand, were raised and seeded, and some proved to be true to the red-flowered habit. *Phaseolus vulgaris*, L. (No. 34,731), is derived from seed obtained from Schleswig-Holstein in 1852, and has the merit of "recovering from severe frost."

THE CORN CROPS.—The total production of Wheat in England and Wales—8,490,692 quarters—is 1,180,000 quarters more than in

1914, when the area under this crop was 363,000 acres less, and is the largest since 1898. The yield this year is one bushel per acre less than in 1914, and nearly three-quarters of a bushel below the average of the ten years 1905-14. The total production of Barley is much the lowest recorded, as a consequence of a greatly decreased acreage, coincident with a poor average yield per acre; the latter is $3\frac{1}{2}$ bushels under that of last year, and $3\frac{1}{2}$ bushels under the ten years' average. Oats have yielded a little more per acre than last year, and are only slightly under the average, but owing to an increased acreage the total production is 900,000 quarters more than last year, and is the highest since 1910. Beans are $2\frac{1}{2}$ bushels per acre under the average, and on a decreased acreage the total yield of 895,000 quarters is the lowest since 1904. The total production of Peas harvested is just under 300,000 quarters; the yield per acre is $1\frac{1}{2}$ bushel above the very poor crop of 1914, but is 2 bushels under the average. The production of hay from Clovers and rotation grasses is considerably more than was anticipated early in the season, the yield of the second cut being in many cases equal to or even better than that of the first; the yield per acre is nearly 1 cwt. above the average, and $2\frac{1}{2}$ cwt. above last year. Meadow hay, on the contrary, is $4\frac{1}{2}$ cwt. per acre below average. The total production of both kinds of hay amounts to 6,600,000 tons, which, with the exception of the very poor crop of 1911, is the smallest since 1901.

PERADENIYA SCHOOL OF TROPICAL AGRICULTURE.—We have received the prospectus of a school of tropical agriculture which has been founded at Peradeniya, Ceylon. It is situated close to the Royal Botanic Gardens, named by Sir W. THINSELTON-DYER "the Kew of the East." The gardens are nearly one hundred years old, and cover an area of 150 acres, containing many products of economic importance. The regulations governing the students are given in detail in the prospectus, and also the syllabus of the course of instruction, which is comprehensive and practical. The course is calculated to occupy one year, and to gain a leaving certificate students must have completed the course and obtained a pass at each of the three terminal examinations. The chief subjects of study are the soil, manuring, the plant, chemistry, economic products, crop pests, plant diseases (with special reference to Ceylon pests), agricultural engineering, animal physiology, and co-operation.

THE FLORA OF ADEN.—In *Gard. Chron.*, August 15, 1914, p. 129, there is a somewhat detailed notice of the first part of the Rev. E. Blatter's *Flora of Aden* in the *Records of the Botanical Survey of India*. The second part has now appeared (the pagination running on from the first part), comprising nearly the whole of the systematic section, classified as in Bentham and Hooker's *Genera Plantarum*, and opening with a key to the families. This is followed by descriptions of the families, genera and species in sufficient fulness for all practical purposes—that is, without reference to other books. The adopted name is followed by comprehensive synonymy, with complete references to the literature and figures; Arabic names; English description; localities; general distribution beyond Aden; uses, and miscellaneous observations, which are often of great interest. This part comprises pages 79-336, and includes the families Menispermaceae to the Urticaceae. The Ranunculaceae, the first family in Bentham and Hooker's classification, is not represented in the wild flora of Aden; an unusual absence, even in floras of small areas. This excellent little "Flora" will be serviceable to travellers in other countries of the Red Sea region.

VEGETABLE PAINT.—In certain parts of Uruguay the farm buildings are a fine white colour, even during the wet season. To obtain

this neat effect a whitewash is used, made from the sliced "leaves" of the Prickly Pear, which, when macerated in water for twenty-four hours, produce a solution of creamy consistence. To this lime is added and well mixed in. When the solution is applied to any surface, be it wood, brick, iron, or other material, a beautiful pearly white appearance is produced, which endures through rains and frosts for many years.

SULPHATE OF AMMONIA FOR AUTUMN DRESSINGS.—The Board of Agriculture and Fisheries wishes to impress upon farmers the desirability of top-dressing Wheat on soils of poor or medium quality with from $\frac{2}{3}$ to 1 cwt. of sulphate of ammonia per acre during November or December. A leaflet explaining the reasons for this recommendation, containing suggestions for the manuring of different soils, will be sent post free on application to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W. In order to encourage the use of top-dressings, the President of the Board of Agriculture and Fisheries, with the concurrence of the Secretary for Scotland, has come to an agreement with manufacturers of sulphate of ammonia in Great Britain, who have agreed to reserve a definite proportion of their make in November and December for farmers' use. Under this arrangement farmers or agricultural merchants will be able to purchase sulphate of ammonia from the manufacturers for prompt cash, at not more than £14 10s. per ton (single bags free), free on rail at works, net cash, in lots of not less than 10 cwt. each. This price relates to sulphate of ammonia containing 20.16 per cent. of nitrogen (=24.5 per cent. of ammonia). Purchases made from merchants or agents, or upon other terms than those stated, must be at such price as may be agreed. Farmers who desire to take advantage of these terms should place their orders with the manufacturers early, or they may find that the supply which has been reserved under this arrangement has been exhausted. If a farmer or merchant finds himself unable to obtain supplies on the above terms, he should at once communicate with the secretary to the Fertilisers Committee, 3, St. James's Square, London, S.W.

THE ORIGIN OF COAL.—The most recent investigations—those of JEFFREY (*Econ. Geol.* IX., and also *Knowledge*, October, 1915)—add considerably to our knowledge of the nature of coal. From these investigations, it appears that the more bituminous coals consist mainly of, and owe their properties to, spores of coal-measure plants. Improved methods of microscopic examination show that ordinary coal consists of alternate layers of shiny lignitoid material—woody remains—and of duller canneloid remains of flattened spores. It is wonderful indeed to reflect that the power developed in the steam-engine of to-day is derived from that stored in the minute spores of Fern-like plants which grew ages ago. That these spores fell to the ground, were washed down in countless numbers by the rain, accumulated in lagoons, fell as a dust-like rain to the bottom, and underwent a sequence of slow changes, whereby they were transformed into coal. Undergoing yet further changes, and losing the last traces of organised structure, they doubtless yielded the mineral oils from which our stores of petrol are obtained.

PUBLICATIONS RECEIVED.—Reprints from the *Journal of Agricultural Research*, Department of Agriculture, Washington, D.C., U.S.A., viz., *Histological Relations of Sugar-Beet Seedlings and Phoma Betae*. By H. A. Edson; *Hibernation of Phytophthora infestans of the Irish Potato*. By I. E. Melhus; *An Automatic Transpiration Scale of Large Capacity for Use with Freely Exposed Plants*. By Lyman J. Briggs and H. L. Shantz; and *Parasitism of Comandra umbellata*. By Geo. G. Hedgecock.

KEW NOTES.

THE BAMBOO GARDEN.—The hardy Bamboos provide one of the most interesting features at the present time. The collection is situated by the side of the Rhododendron Valley, the Bamboo Garden being sheltered on all sides by tall trees. The soil is naturally fairly heavy, yet during dry weather it is necessary to give the plants copious supplies of water. Practically all the Bamboos hardy outside in this country are represented by one or more groups. *Arundinaria nitida* is represented by several large clumps, its graceful habit and elegant beauty being unsurpassed by any other Bamboo. This species is one of the hardiest, and is most attractive as a lawn specimen. The tallest hardy species is *Arundinaria fastuosa*, with stems up to 20 feet or more in height. In contrast to the last-named this Bamboo is upright in growth, forming large, stately clumps, which planted in the pleasure grounds introduces a distinct type of vegetation. Pampas Grasses in several varieties provide a pleasing foil to the foliage of the Bamboos, beneath the shade of which a late-flowering Plantain Lily, *Funkia tardiflora*, is producing spikes of lilac flowers.

THORNS.—At the south end of the Temperate House the Thorn (*Crataegus*) collection is worth a visit. The fruits are very distinct and varied. Outstanding features are the hybrid *Crataegus Carrierei*, carrying quantities of comparatively large orange-red fruits, which remain on the tree until the new year. The leaves also persist longer than those of most *Thorus*, and are changing to pleasing bronzy-crimson and gold. The Washington Thorn, *C. cordata*, is a most distinct North American species, and one of the best half-dozen cultivated in gardens. A tree up to 30 feet in height, it is most useful as a lawn specimen, particularly for gardens of moderate size. *C. cordata* is one of the latest to flower, producing quantities of white blossoms in early July, and now the trees are laden with small orange-scarlet fruits, rather suggesting those of *Pyracantha coccinea*. Perhaps more remarkable than beautiful is the Glastonbury Thorn, *C. monogyna* var. *praecox*, which is carrying a good crop of blossoms, and at the same time ripening fruits.

COTONEASTERS.—A considerable number of Cotoneasters are fruiting freely. *C. frigida* is very prominent, both as a large shrub and a small tree, the branches being weighed down with heavy crops of red "berries," also *C. pannonica*, *C. buxifolia*, *C. Franchetii* and *C. rotundifolia*, with red fruits. *C. bacillaris* is one of the best, with purplish-black fruits. Among the newer Chinese Cotoneasters introduced by Mr. E. H. Wilson several are very distinct, and promise to be acquisitions. *C. salicifolia* var. *floccosa* is an elegant evergreen shrub. At present the Kew plants, which were raised from seeds, are only 3 to 4 feet high, but they are said to reach more than double this height. The plants fruit freely, and the "berries" are a rich red. The birds have unfortunately already cleared the bushes. In the rock-garden another of Mr. Wilson's introductions, *C. humifusa*, from Western Hupeh, is distinct. Prostrate in habit, the evergreen growths, freely sprinkled with bright red fruits, hang over the large boulders.

YELLOW-FRUITED YEWS.—In the Yew collection several large bushes of the yellow-fruited variety, *Taxus baccata* var. *fructu-luteo*, are prominent. They are fruiting very freely, and in contrast to the dark-green leaves are even more effective than the red-fruited varieties.

FLOWERS.—For the first week in November a bed of *Kniphofia uvaria* (aloides) var. *maxima* is particularly attractive on the Range Terrace near the Orchid Houses. The plants are bearing freely sturdy spikes of orange-red flowers, 4 to 5 feet high. Nestling amongst the hardy Ferns are many dainty flowers of the hardy Cyclamens. A. O., November 6.

AMERICAN NOTES.

TITHONIA SPECIOSA.

THIS Mexican annual, which was beautifully illustrated by a coloured plate in *Gard. Chron.*, March 13, 1915, has been frequently mentioned as a sort of red Sunflower, and was at one time referred to as *Helianthus*. A writer in the *Saturday Westminster Gazette*, March 6, 1915, remarks that "it ranked with the true Sunflowers until the discovery of small botanical differences led to its rechristening. From the gardener's point of view it is purely a Sunflower . . ." Having grown *T. speciosa* this year in Boulder, I was interested to see what relationship it had to the true Sunflowers. The disc-corollas have a large bulb near the base, as in *Helianthus*; the achenes are smooth and hairless, but the pappus consists of a short, irregular crown, extended on two sides into a long, awn-like process, not very suggestive of *Helianthus*. The ray-achenes are trigonal, with a very short pappus-crown, lacking the awns; the ray-florets are infertile, wholly without pistils. On more minute examination it is found that the stamens of the disc-florets are peculiar, very thick (about a third of a mm. diameter), flat-

NOTES ON IRISES.

CURIOUS RESULT OF HYBRIDISATION.

FOR three years now I have had *Iris unguicularis*, or, as it is more commonly but less properly called, *stylosa*, in flower in the last week of September. The plants which give me these very welcome flowers are a few that resulted from crossing the typical Algerian plant with a dwarf Greek form. The interest of the cross lies in the fact that the Greek plant has never in my garden flowered until March or April.

It would be interesting to know whether any work has been done with a view to discovering the factors that determine the date at which a plant flowers. Such evidence as I have so far accumulated scarcely seems to throw any light on the question. For instance, a stray flower of *Iris chamaeiris* fertilised in June with pollen of *Iris trojana*, produced a hybrid, which is intermediate in size between its two parents and which has flowered regularly for six or eight years past in September and October. Strange to relate, however, this hybrid has refused to flower in the autumn in the south of France in a soil in which bearded Irises are far



FIG. 110.—MESSRS. H. J. JONES' EXHIBIT OF CHRYSANTHEMUMS AT THE R.H.S. MEETING ON TUESDAY LAST.
(See p. 313.)

fish (strap-like), very minutely hispidulous. The disc-bracts are long, with long pointed, yellow (dilute orange) ends, which extend far beyond the closed florets. The involucre bracts are large and foliaceous, and the peduncles are greatly broadened under the heads and are hollow, with astonishingly thin walls; in a specimen split open, the peduncle was found to be hollow for 130mm. below the head. The early leaves are broad and without lobes, but the mature leaves are five-lobed and very peculiar—very unlike those of *Helianthus*. The most interesting distinction from *Helianthus* is in the colour of the rays, which I found to be entirely due to a solid pigment (orange-vermilion), without any anthocyan, and therefore entirely different from the red of the Red Sunflower. I could not extract any anthocyan from the rays; but there is a very minute quantity (appearing dark blue) in the disc-bracts, and an appreciable quantity in the stems, making them purplish. Thus *Tithonia speciosa* is by no means a "critical" segregate from *Helianthus*, but belongs to a very distinct genus, and should not be called a Sunflower. T. D. A. Cockerell, Boulder, Colorado.

more vigorous than they are here in this light sand. On the other hand, a cross between *I. chamaeiris* and the so-called *I. florentina*, which a neighbour raised in a garden not half a mile away, frequently gives him many spikes of white flowers in the late autumn, while in this garden it always refuses to flower except in the spring. W. R. Dykes.

[Various researches have been made into time of flowering of plants. In the case of Peas (*Pisum sativum*) the result of crossing early and late varieties is F_1 , the time of flowering of which is nearer to that of the late than to that of the early parent. In F_2 segregation occurs, and earlier, midseasons and later are produced.—Eps.]

*** NEW POSTAL RATES.—Contributors and correspondents are reminded that under the new postal rates, which came into operation on the 1st inst., letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopence, and thereafter at the rate of $\frac{1}{2}$ d. every two ounces.

HOME CORRESPONDENCE.

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

LIGHT AND THE LIFE OF PLANTS.—From your article on November 6 two important facts are omitted. Light is the cause of transpiration, while heat is that of respiration, whether ionisation be present or not. For experiments show that if heat be raised, the emission of CO₂ increases correspondingly; and if the curve be plotted, it comes out a parabola—the curve which a stone takes when thrown into the air. It is a non-returning curve, as an ellipse; hence it would indicate that the loss of CO₂ must ultimately cause death. With regard to transpiration, my experiments (*Journ. Lin. Soc.*, XXII., 81) show that red and violet rays always give maxima, while green, the lowest minimum; the alternate rays—viz., yellow and blue—act most powerfully in the process of assimilation (*Journ. R. Hort. Soc.*, 1893). *George Henslow.*

MALFORMED HONESTY.—The four wings of the fruit of this plant, shown by Mr. J. Staley (*Gard. Chron.*, Nov. 6, p. 298), indicate, and supplies a proof of, the long-expressed belief that the flower of a crucifer is descended from a four-merous type; and antecedently to that, from a five-merous. (*Trans. Lin. Soc. on the Origin of Floral Aestivations*, etc., 1877, tab. 25, figs. 15-19). *George Henslow.*

SPORTING IN COPROSMA (see p. 298).—In the sport from the variegated form of *C. Baueri*, the original marking is transposed, the centre of the leaf being yellow and the margin green. This form cannot be regarded in the light of a novelty, for under the name of *Coprosma Baueriana picturata* it was sent out as a new plant by the late Mr. William Bull, of Chelsea, in the spring of 1876. It is described as differing from *C. Baueriana variegata* in having central instead of marginal variegation. The original plant was received from New Zealand, and was propagated and distributed by Messrs. Bull. The price charged was half a guinea each. New plants in those days were much more expensive than they are now. After its distribution a stock was kept for some years, but there was never any great demand for the plant, owing to its being less ornamental than the ordinary variegated form. *W. T.*

THE BAMBOO HAT INDUSTRY (see p. 273).—*Brussonetia papyrifera* (commonly called *Moral papalero*) grows plentifully in Spain, where it was introduced from Japan between the years 593 and 629; it is a source of considerable wealth, and is used for the manufacture of wood pulp. The shoots of this shrub are cut down about the month of November, when they reach the height of 2 or 3 metres. The wood pulp is converted into hats and other useful articles. Brazilian hats, made from the fronds of palmetto Palms, also belong to the ever-increasing foreign hat industry, the fine "Panama" shapes of good quality being the masterpieces among woven hats. The Bamboo hat industry is a growing one, and well-made Bamboo hats are likely to be welcome, for they are becoming, shady and cheap. *E. S. Romero-Todesco.*

FORMING NEW PLANTATIONS.—Mr. Molyneux states in his interesting note under the above heading (p. 298) that in his experience Larch is valueless as a timber tree except under "special conditions—deeply-trenched soil." This opinion is contrary to my experience. The grand specimens of Larch growing on the Dunkeld and Blair Athol estates of the Duke of Athol in Perthshire have not been planted in deeply-trenched soil. Neither have the equally fine examples of this tree growing on the Essio Park estate (Corrig and Coolbanagher Woods), Portarlington, situated about four miles apart as the crow flies on high altitudes and growing in shallow soil of ordinary texture on a sub-stratum of limestone in which there was, as a matter of course, no opportunity for deep rooting. About three miles distant from the above-mentioned woods on the Woodbrook (Wilmot Chetwood) estate equally fine specimens of the Larch are flourishing in a wood on the banks of the Barrow, about 45 miles from Dublin, under conditions the reverse of those described above.

The trees were growing in soil of medium texture about 3 feet above high-water level on a gravelly subsoil, hence it cannot be said that the trees indicated were grown under "special conditions." The Larches were all handsome, straight, well-developed specimens with fine girth of stems. I am writing of trees as seen forty years ago, but there is no ground for supposing that trees planted during the intervening years have not made equally satisfactory growth, nor is there any just reason to suppose that mature plantations of the Larch made under ordinary conditions will not do equally well, and in due time yield profitable results. Good specimens of Larch always find a ready sale with the majority of timber merchants. Mr. Molyneux says that "before recommending Larch some information should be given as to the hindrances to the growth of this tree, soil in which it will thrive, and that in which it will not." Hence this note. The tree will not thrive in bogland. In making new plantations it would be advisable to intermix Corsican Pine freely with the plantings of Larch, the former being thinned in due time for rough estate work, fencing, and similar purposes. *H. W. Ward, Rayleigh.*

STREPTOCARPUS TAYLORI (see p. 293).—It may interest you to know that I made a similar cross and at the same date as that recorded by Mr. Taylor, using two or three varieties of the *achimeniflorus* type. I also used the old, large-leaved white species—*S. gigantea*, I believe—as a parent, crossed with *achimeniflorus* hybrids. The seedlings, which have just finished blooming, have been very interesting. I am afraid that the progeny of my two crosses have become mixed, so that I cannot be certain as to the parentage of any individual. In habit they do not vary much, and many of them would answer the description of *S. Taylora*, others have somewhat smaller leaves, and there is a good variety of colours—pure white, pencilled white, pale blue and rosy-purple. One small plant growing in a 3-inch pot, a blue variety, carried over sixty blooms on five stems, while a white variety had forty blooms on three stems. The flowers are of similar form and habit to those of *S. Taylora*, though some of them may be smaller. The plants are carrying a fair crop of seed pods, and provided they will reproduce themselves true from seed promise to furnish a useful addition to the *achimeniflorus* strain. *C. H. Middleton.*

HUMMOSEN (see p. 298).—When this preparation was first brought under the notice of the public some years ago I had some of the material sent to me for trial, and this I tried on various kinds of vegetables and plants growing out-of-doors as well as on plants growing under glass, including Tomatoes and Cucumbers, but in no case did I find any difference in the growth of the plants so treated and those not dressed. Practical horticulturists and agriculturists are the best, and I might say the only qualified judges of the efficacy of new fertilising preparations, and to their expressed opinion thereon the general public should look. *W.*

EYE-ROT OF THE APPLE.—Messrs. Salmon and Wormald have well named the disease to which I was the first person to call public attention, the description of what appeared to be a new malady having been given in the *Gardeners' Chronicle* of August 14, page 96. Some specimens had been sent to Mr. Salmon, but he is mistaken in stating that I "thought the disease was an unusual form of brown rot." I pointed out that it resembled brown rot in some points, but differed from that disease in others, and particularly in appearing around the eye of the fruit, instead of on the side of the cheek. At first the disease was noticed only on the fruit of Worcester Pearmain, but in the course of packing it has since been found in isolated cases on several other varieties, including Cox's Orange Pippin, Charles Ross, Allington Pippin, Newton Wonder and Bramley's Seedling. There were, however, a hundred times as many diseased Apples on Worcester Pearmain as on any other variety. Specimens were also sent to the mycologist at Kew Gardens, who found that several fungi were present, though, like Messrs. Salmon and Wormald, he described a fusarium as the principal cause of the malady. The particular

species of fusarium could not be determined at the time. My own impression is that, whatever fungi may have settled on the rotted portion of an Apple, the original cause of the injury was some insect, or a number of insects, particularly aphides, which attacked the fruit when it was quite young and small. Mr. Salmon has not found any puncture, but could not a sucking insect cause injury without making a puncture? *A Southern Grower.*

WOOLLY APHIS ON THE WILD CRAB.—It may interest J. Murison (p. 298 of this volume) to know that I have frequently met with the American blight (*Schizoneura lanigera*) on the Wild Crab, in Epping Forest, where the tree is plentiful. In open parts of the forest the divaricate branches of the tree are thickly studded with short fruiting spurs, and some of them appear quite hoary with the tufts of woolly matter where the colonies of insects are situated. I would not be surprised to find this species of blight on other species of *Pyrus* belonging to the section *Malus*, but never on the Pear section (*Pyrus*), nor any other group of the genus, far less on the other genera of Rosaceae, such as Hawthorn or Cotoneaster. The root form of the blight has been described as a distinct species by Bueton, namely, *S. fodiens*, and Edward T. Connell, in his book on *British Vegetable Galls*, says that this affects the roots of the Black Currant, though to a less degree. If the American blight has never been found upon such American species of Crab as *P. coronaria* or *P. angustifolia*, it would go far to prove that it was of European origin, notwithstanding its supposed introduction from America in 1787. The cultivated Apples there are of European origin. *J. F.*

RHYTISMA ACERINUM.—Sir Herbert Maxwell draws attention to the unusual scarcity this season of the parasitic fungus which disfigures the leaves of the Sycamore. For the past twelve years in the London parks it was particularly abundant, but an examination of many heretofore-affected trees has revealed the presence of very few affected leaves during the past season. Premature leaf-shedding is the worst effect of severe attacks. *A. D. Webster.*

—It was a surprise to me to learn from Sir Herbert Maxwell that the leaves of most Sycamores show no sign of *Rhytisma* this year in Scotland. Previous to 1884 I regarded the blotches on the leaves of the Scotch Plane (*Acer Pseud-platanus*) as a natural form of variegation. Whether on the trees, or upon the ground in the late autumn, the leaves were thickly covered with blotches, six to a dozen or more on each leaf, and it never occurred to me to connect them with disease, because the leaves remained intact, and the trees were of the largest size, wherever I had been in Aberdeenshire or Kincardineshire. This I considered altogether different from the destructiveness of disease, as evidenced by *Phytophthora infestans* on the Potato. The *Rhytisma* is never so plentiful in Surrey as in the north; indeed, I regard it as scarce, judging from my experience of it. The Sycamore is very plentiful in Surrey, sows itself naturally in woods, waste places and gardens, where it is often allowed to grow to large size, yet I would have a difficulty in finding specimens in many districts. Spermata are produced in great abundance on the blotches, but do not reproduce the fungus. An ascerigerous form of fruit is produced on the dead leaves in winter, and ripening in spring, reproduce the fungus on the young leaves. Drought prevailed from April to the end of June in the south, just as in Scotland, and it is reasonable to suppose that this prevented the spores from germinating on the young leaves, and by the time the rain came the leaves were too mature for the spores to germinate, or the spores had all come to rest where they could not grow. If the spermata on the blotches were capable of reproducing the fungus, there would have been an epidemic of the fungus after the advent of rain. *J. F.*

YEW POISONING (pp. 263, 296).—I do not agree with Mr. T. Smith, that there are many kinds of Yews, and that most of us have still something to learn about them. Only seven distinct species of Yew are known—the common

Yew, Japanese Yew, Chinese Yew, Pacific Coast Yew, Canadian Yew, Florida Yew, and Mexican Yew. There are also 16 nurserymen's varieties of the common Yew, the variations being in the colour of the fruits and the size and arrangement of the leaves (the fastigate and prostrate forms). The Yew contains a poisonous alkaloid, viz., "taxine," which, if a sufficient quantity be eaten, is deadly, not only to cattle, but also to most animals, birds and human beings. The cattle Mr. Smith refers to as having eaten Yew as high as they could reach, would suggest that they only ate a small quantity. I have many Yews in my park which have been eaten for years by cattle and horses in moderation, and I have not lost a single animal from this cause. On the other hand, last year some cattle were turned into a meadow practically bare of feed, and, being hungry, they forced through a hedge into a wood and ate a large quantity of Yew, with the result that eight or nine died of Yew poisoning. *H. Clinton Baker.*

ROSES MRS. M. H. WALSH AND SANDERS' WHITE (see pp. 280, 298).—Has Mr. Molyneux the wrong variety or have the labels become confused? With me Sanders' White is perfectly immune from mildew, whereas Mrs. M. H. Walsh is badly addicted to it. The foliage of Sanders' White is glistening, almost as much as that of Alberic Barbier; in fact, it comes midway between that fine Rose and Shower of Gold for beauty of foliage. I agree with Mr. Taylor that Sanders' White is the best white rambler Rose. I hope our collections will soon be enriched by a white American Pillar; I know of one amateur in this country who has grown this American novelty, and he is loud in his praises of it. *Experience.*

—I am somewhat surprised at the nature of Mr. Molyneux's experience with these two Roses, and can only conclude that he has not got the true stock of Sanders' White. The two varieties are quite distinct in habit, foliage, spines, wood, flowers, and fragrance. I have seen both sorts growing together in different localities in Scotland, and in every case Sanders' White is almost immune to mildew, and Mrs. M. H. Walsh is highly susceptible. I think I know all the White Ramblers at present in commerce, and I look upon Sanders' White as the purest, finest, and most fragrant of them all. For some reason or another it is not generally listed in trade catalogues, but this will be remedied when its undoubted merits become known. It is quite distinct from any other Rambler, and I was glad to note Mr. Cobb's appreciation of it (see p. 280). I have taken the liberty of sending a plant of each variety to Mr. Molyneux, and this will enable him to see at a glance how distinct they are. He can rest assured that what I send are true stocks, and he will, no doubt, give us his experience later on. *George M. Taylor, Midlothian.*

LINDEN LEAVES.—I have forwarded some Linden leaves to Wye College, as suggested in the leader in the *Gardeners' Chronicle* of September 25, 1915. I am also sending to you a collection of leaves of the same variety and also a Poplar leaf I picked up on the footpath of the Brighton road yesterday. It had fallen from one of three or four comparatively young trees which had been pollarded about four years ago, hence their very vigorous growth, the whole of the foliage at the present time retaining its pristine colouring. It has larger leaves than I have ever seen on any other variety. I also enclose leaves of a very large-leaved variety of Linden from a beautiful specimen in the grounds of H. Padwick, Esq., The Manor House, Horsham. It was planted upwards of forty years ago by Mrs. Padwick. It is about 70 feet high, and its boughs would have reached the sward but for being pruned to allow the grass to be shown. This variety retains its foliage for a longer period than most varieties, and at the present time the specimen in question presents a strikingly beautiful aspect, with a background of other kinds of deciduous and evergreen trees. There is on the leaf I send you a broad margin of bright orange-yellow colour, apparently the work of a fungous disease. *William Gardiner, Horsham.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 9.—The exhibition in connection with the fortnightly meeting held on Tuesday last in the Vincent Square Hall was smaller than usual, and the attendance was not large.

An imposing collection of Chrysanthemums was the finest floral exhibit, and was awarded a Silver-gilt Flora Medal.

The Floral Committee awarded a Silver-gilt Knightian Medal for a table of winter-flowering Begonias, and eight other medals for groups. This Committee recommended five Awards of Merit to novelties.

The Orchid Committee awarded five medals for groups, and one First-class Certificate and three Awards of Merit to novelties.

The Fruit and Vegetable Committee made the highest award—a Gold Medal—for a collection of vegetables. Several new varieties of Apples and Pears were submitted. An Award of Merit was recommended for a variety of Apple, and the same distinction was bestowed on a seedling Pear, subject to an inspection of the tree by a sub-committee.

At the three o'clock meeting in the Lecture Room an address on "Useful Books for an Amateur Gardener's Library" was delivered by Mr. E. A. Bowles.

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. Geo. Paul, E. A. Bowles, G. Reuthe, John Green, C. Dixon, John Dickson, J. W. Moorman, J. Jennings, C. E. Shea, W. P. Thomson, C. E. Pearson, W. G. Baker, E. H. Jenkins, C. R. Fielder, R. C. Notcutt and A. Turner.

AWARDS OF MERIT.

Begonia Fire Flame.—The blooms of this new winter-flowering variety are shaded with orange on a rose base, the edge of the petals passing to glowing rose. The unopened buds are cerise suffused with scarlet. The plant has an excellent habit, being compact and robust. The flowers, which measure $2\frac{1}{2}$ inches across, are borne well above the foliage. Shown by Messrs. STUART LOW AND CO.

Chrysanthemum Phyllis Cooper.—A beautiful single variety of deep yellow colour. Shown by Mr. PHILIP LADDS, Swanley.

C. Golden Champion.—A large Japanese variety of the best exhibition type. The incurving florets are canary-yellow with sulphur-yellow reverse, and very long, so that the bloom has great depth. The two shades are very pleasing.

C. Edith Cavell.—This variety is one of the finest Chrysanthemum novelties of the season. The blooms are very large. There is a thin layer of crimson on the face of the florets, the base-colour of which is gold, giving an impression of terra-cotta red. Some of the florets roll back, revealing a pale gold under-surface, especially in the centre of the bloom. Both these varieties were shown by Messrs. W. WELLS AND CO.

Solanum aculeatissimum (syn. ciliatum) (see fig. 111).—The award made to this plant was given on account of its ornamental fruits, which are of a bright gipsy-red, and said to remain on the stems for twelve months. The fruits are much used for decorative purposes in the South of France, whence specimens were imported last February by Mr. R. F. Felton. The plants in question were raised from seeds produced by those originally imported. Shown by Messrs. R. F. FELTON AND CO.

OTHER NOVELTIES.

Mr. T. A. WESTON, Orpington, showed flowering sprays of *Stevia paniculata*, a composite bearing heads of small white flowers and narrow leaves, the whole having a graceful appearance. Mr. WESTON informed us that the plant is largely used by florists in America and France for the same purposes as Gypsophila, and suggested that it might be worth growing by market nurserymen in this country. Messrs. ALLWOOD BROS., Haywards Heath, showed a fine new Perpetual-flowering Carnation, The Major, of a rich Indian chestnut colour. Messrs. W. WELLS AND CO., Merstham, exhibited a handsome Incurved yellow Chrysanthemum, named Douglas Wells.

GROUPS.

The following Medals were awarded for collections:—

Silver-gilt Flora Medals to Messrs. H. J. JONES, LTD., Ryecroft Nurseries, Lewisham, for a floor group of Chrysanthemums (see fig. 110). The bold style of staging was very effective, and the decorations of Fern and autumn tints were in good taste, providing the necessary foil for the magnificent blooms without appearing obtrusive. The employment of handsome porcelain vases as receptacles added a further interest, whilst the value of skilful colour blending was not overlooked. Large show blooms of the finest quality were grouped in bold masses; the more notable varieties were Boh Pulling, yellow; Mrs. Howard Kinsey, white; Mrs. R. C. Pulling, lemon-yellow; Mrs. Edwards, white; Lady Grace, white suffused with mauve; and Mrs. O. H. Broomhead, a new variety of golden-yellow colour. Of the smaller decorative varieties, Florrie King (pink), Estelle (crimson), Ceddie Mason (crimson), Jessica (bronze), and T. Barnes (lake), are a selection. Messrs. STUART LOW AND CO., Enfield, for winter-flowering Begonias. The collection filled a large table, and was representative of the best sorts, such as Optima, salmon; Elatior, rosy-red; Clibran's Pink; Mrs. Heal, carnation; Rosalind, rose-pink; Exquisita, a large variety of salmon-pink colour with paler centre; and Emita, orange-scarlet. The plants were healthy specimens, and bore a profusion of blossoms. This firm also showed Carnations of the perpetual-flowering type.

Silver-gilt Banksian Medal to Messrs. J. PIPER AND SONS, Bayswater, for ornamental shrubs, similar to their exhibits at the two previous meetings.

Silver Flora Medals to Messrs. H. B. MAY AND SONS, The Nurseries, Edmonton, for Ferns, including hardy and indoor varieties. Amongst the latter were choice specimens of Adiantum Veitchii, the young fronds being beautifully tinted with rose, A. farleyense Lemeskii, and A. f. gloriosum, the finest of its race. Messrs. GODFREY AND SONS, Exmouth, for Single Chrysanthemums, most of the varieties having been raised by this firm. Eldorado, yellow; Miss Margaret Gidley, terra-cotta; Fascination, soft apricot; Bessie Gard, white; Devonshire Lass, rich, clear yellow; and Lady Clinton, pink; are a selection.

Silver Banksian Medals to Messrs. J. CHEAL AND SONS, Crawley, for autumn tints and berries. Messrs. R. FELTON AND SONS, Florists, Manover Square, for baskets of the red-fruited Solanum ciliatum, intermixed with fruiting sprays of Eucalyptus globulus, the glaucous tint of the latter softening the brighter tone of the Solanums. The exhibit was a masterpiece in artistic grouping. Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering Carnations. Mr. G. REUTHE, Keston, Kent, for alpine and hybrid Nerines; and Mr. J. J. KITTLE, Corfe Mullen, Dorsetshire, for Violets.

Orchid Committee.

Present: Mr. J. Gurney Fowler (in the chair), Messrs. Jas. O'Brien (hon. secretary), J. Wilson Potter, R. A. Rolfe, R. G. Thwaites, F. J. Hanbury, Pantia Ralli, F. M. Ogilvie, J. Armstrong, W. Cobb, J. Cypher, W. H. Hatcher, W. P. Bonnd, C. H. Curtis, A. Dye, W. H. White, S. W. Flory, Gurney Wilson, J. Charlesworth, A. McBean and Sir Harry J. Veitch.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum Pembury (gandavense × eximium), from J. GURNEY FOWLER, Esq., Brackenhurst, Pembury. A noble hybrid, and represented at its best by a splendid plant, the spike bearing eleven large and perfectly formed flowers. The ground is white with a shade of purple, the greater part of the sepal being deep claret-red. The petals are white on the outer third and base, the remainder being coloured like the sepals. The very broad lip is white in front, the crest being yellow with purple markings around.

AWARDS OF MERIT.

Vanda luzonica.—From Messrs. SANDER AND SONS, St. Albans. A beautiful species from the Island of Luzon, which has been noted on

several occasions lately, but which had not before been flowered in Europe. The habit of the plant is similar to *Vanda tricolor*, and its nearer ally is *V. insignis*, the flower being about the same in size. The upright spike bore six flowers with sepals and petals clear-white, the basal parts having a thin purple line behind the column. The short side lobes of the lip are whitish with some dark markings; the front lobe is violet-purple. In one variety recorded there were faint purple marks on the sepals and petals, and it may be that colour variation may be found in other specimens.

Brasso-Cattleya Admiral Jellicoe Broadlands variety (B.-C. *Digbyano-Mossiae* × *C. Lord Rothschild*), from E. R. ASHTON, Esq., Broadlands, Camden Park, Tunbridge Wells. The flower is large and has much of the perfect shape of its parent, B.-C. *Digbyano-Mossiae*, but with an expanded, crimped labellum which is rosy-lilac with a yellow disc. The sepals and petals are light rose pink, and of fine substance.

Saphro-Cattleya Pearl (S.-C. *Doris* × *C. Portia magnifica*), from Messrs. J. AND A. McBEAN, Cooksbridge. On a dwarf plant of

dark form; the new *C. Puritan* (Warszewiczii Frau Melanie Beyrodt × *Maggie Raphael alba*), with pure-white sepals and petals and purple lip; *Sophro-Laelio-Cattleya de Vere Beauclerc* (L.-C. *bletchleyensis* × S.-L. *heatonensis*), dark Indian-red with maroon lip; *Lycaste Imschootiana* and *Cypripediums*.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed *Odontioda Sheila* (parentage unrecorded), equal in size to *Odontoglossum crispum*, but of a clear rose-purple colour with a bronze shade. The lip is large; the crest is yellow with a red band and light-rose front. Mr. Ogilvie also showed the original *Cypripedium Elatior* Shrubbery variety, which had previously gained a First-class Certificate.

PANTIA RALLI, Esq., Ashted Park, Surrey, showed *Sophro-Laelio-Cattleya Serbia* (S.-C. *pumeximia* × *C. labiata*), of good shape and closely resembling typical *C. labiata* in colour.

MESSRS. J. CYPHER AND SONS, Cheltenham, were awarded a Silver Flora Medal for an effective group, in which were many fine *Cypripediums*, including *C. Priam*, *C. Elatior*, *C. Rossetii*, the very handsome *C. Endora*, *C. F. M.*

pretty group of *Cattleyas*, *Vanda coerulea*, *Oncidium varicosum* and other Orchids. Remarkable plants in the group were a specimen of *Cirrhopetalum ornatisimum*, with several umbels of its quaint flowers, and two scarlet *Sophro-Cattleya Doris*.

MESSRS. J. AND A. McBEAN, Cooksbridge, staged a pretty group for which a Silver Banksian Medal was awarded. At the back were two specimens of their handsome *Cymbidium Doris*, and among the *Cattleyas* were good forms of *C. Hardyana* raised at Cooksbridge, and promising to be superior to the imported type.

MESSRS. ARMSTRONG AND BROWN, Tunbridge Wells, showed the charming little *Cirrhopetalum gracillimum*, with several spikes, bearing at the top rayed umbels of slender golden-red flowers of singular structure and several inches in length. Also *Odontoglossum Thisbe superbum* (*elegans* × *crispum*), an elegant hybrid.

MESSRS. FLORY AND BLACK, Slough, showed *Brasso-Laelio-Cattleya Morna superba* (B.-C. *Madame Chas. Maron* × L.-C. *bletchleyensis*), a fine, bold flower of fine substance and of a clear light-rose colour. The broad lip is almost plain-edged, and shows little of the B. *Digbyana* ancestor. Messrs. Flory and Black also showed *Laelio-Cattleya Bola* and L.-C. *Barbarossa*.

Fruit and Vegetable Committee.

Present: Mr. Joseph Cheal (in the chair), Messrs. W. Bates, Edwin Beckett, A. W. Metcalfe, H. J. Wright, J. G. Weston, A. Bullock, E. A. Bunyard, J. Jaques and Owen Thomas.

AWARDS OF MERIT.

Apple Madresfield Court.—This variety was raised from Ribston Pippin × Worcester Pearmain. The fruits resemble the latter parent in size and colouring, and are of the true Pearmain shape. They are about 2½ inches high; the stalk is long and thin, set in a deep, narrow cavity. The skin is yellow around the eye, with considerable russet markings. The flesh is yellowish, and of agreeable flavour. Shown by Mr. J. CARLOSS, Melbourne Street, Barbourne, Worcester.

Pear November Red.—A provisional Award of Merit was recommended for this variety, which was raised from Doyenné du Comice × Marie Louise. The fruits are of large size, not very pyriform, and have a considerable flush of red. The tree will be inspected by a deputation of the Committee. Shown by Messrs LAXTON Bros.

MESSRS. LAXTON BROS., Bedford, showed numerous seedling Apples and Pears. Besides the one selected by the Committee for award, Pear Laxton's White Knight impressed us favourably. In shape the fruit resembles Glou Morceau; it has fine flavour and melting flesh.

Mr. A. DAWKINS, 403, King's Road, Chelsea, was awarded a Gold Medal for a collection of vegetables. The exhibit included nearly every kind in season, and the quality was of a high standard. The group was arranged with great skill for effect. At the back were superb heads of *Celeriac* Standard Bearer, Aldenham White and Veitch's Early Rose; splendid Leeks of the Musselburgh and Lyon varieties; and numerous winter greens. On the flat were grand dishes of Beets Improved Black, Improved Globe, and Dawkins' Red Perfection; Onions Excelsior, Selected Globe, Main C-op, and Flat Yellow; Carrots Veitch's Matchless, that well merited their name, and Model; Parsnips Hollow Crown, *Celeriac* Prague Smooth, Mammoth Salsafy; Radish China Rose, an uncommon vegetable, as large as a big Capsicum, and said to be excellent eating; Potatos in variety; Beans, Tomatos, Cucumbers, Stachys tuberifera, Globe Artichokes, Mushrooms, Scorzoneria, Salsafy, Turnips, Kohl Rabi, and Capsicums.

W. VOSS, Esq., Fairlight Glen, Rayleigh, Essex, was awarded a Silver-gilt Banksian Medal for a collection of Apples and Pears. The fruits were of good average quality, the finest specimens being (Pears): Doyenné du Comice, Beurré Bachelier, Beurré Hardy and Pitmaston Duchess; (Apples): Scarlet Pearmain, Duke of Devonshire, Winter Peach, Cox's Orange Pippin, Newton Wonder, Lane's Prince Albert, The Queen and Waltham Abbey Seedling.



FIG. 111.—FRUITS OF *SOLANUM ACULEATISSIMUM*.
(See Awards by the Floral Committee.)

compact growth the flower of this pretty hybrid looked unusually large and striking, the very broad petals being a marked feature. The sepals and petals are coloured bright-rose; the lip is ruby-purple with thin yellow lines at the base.

PRELIMINARY COMMENDATION.

Odontoglossum Doris nobiliar (*Ossulstonii* × *crispum*), from Messrs. ARMSTRONG AND BROWN, Tunbridge Wells. A small seedling bearing its first flower, a large and beautifully formed bloom, marked and tinged with purple at the back. The outer parts of the segments are white with a shade of the purple on the reverse side, the inner halves bearing clusters of confluent dark-red blotches. The broad, white lip has purple markings in front of the yellow crest.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., Brackenhurst, Pembury, staged a splendidly grown selection of rare Orchids, among which were noted *Cattleya Fabia* Fowler's variety, one of the best dark forms; *C. Mantinii* Fowler's variety, also a

Ogilvie, and the best forms of *C. insignis*. Plants of *Dendrobium Phalaenopsis*, including the pure-white form, were well displayed, also the richly coloured *Cattleya Bowringiana atrosanguinea* and the true *Masdevallia Veitchiana grandiflora*.

MESSRS. CHARLESWORTH AND CO., Hayward's Heath, were awarded a Silver Flora Medal for a group consisting principally of hybrids, among which were *Odontoglossum Ceres Goodson's* variety, which had received an Award of Merit, and is still the best form; fine blotched *Odontoglossums*, a selection of hybrid *Cattleyas*, and *Laelio-Cattleya Phoebus* (*C. Iris* × L.-C. *Cappel*), of a rich Indian yellow with dark-red lip.

MESSRS. SANDER AND SONS, St. Albans, received a Silver Flora Medal for a group in which the forms of *Cattleya Fabia*, including good white varieties, and other *Cattleyas* were effective. *C. Tokyo*, a yellow hybrid with crimson lip, has gold veining at the base, and is a remarkable flower.

MESSRS. STUART LOW AND CO., Jarvisbrook, were awarded a Silver Banksian Medal for a

WISLEY TRIAL OF AUTUMN CABBAGES.

RED VARIETIES.

Erfurt Early Red ...	Sent by Barr and Sons ...	Award of Merit (1895) confirmed
Barr's Miniature Red ...	Sent, raised, and introduced by Barr and Sons ...	Highly commended
Sutton's Dwarf Blood-red ...	Sent and introduced by Sutton and Sons (1886) ...	Commended
Carter's Red Pickling ...	Sent, raised, and introduced by J. Carter and Co. ...	Commended

GREEN VARIETIES.

Harbinger ...	Sent by H. W. Nutting and Son, and introduced by Sutton and Sons ...	Award of Merit (1911) confirmed
Best of All ...	Sent, raised, and introduced by Barr and Sons ...	Highly commended
Eukhuizen Glory ...	Sent by Dobbie and Co., and introduced by Sluis and Groot ...	Highly commended
Gibson's Dwarf Drumhead ...	Sent by Barr and Sons ...	Highly commended
Hurst's Earliest ...	Sent, raised, and introduced by Hurst and Sons ...	Highly commended
Sutton's Earliest ...	Sent and introduced by Sutton and Sons (1889) ...	Highly commended
Sutton's Little Gem ...	Sent and introduced by Sutton and Sons (1886) ...	Highly commended
Sutton's Tender and True ...	Sent and introduced by Sutton and Sons (1896) ...	Highly commended
Cooper's First ...	Sent and introduced by Cooper, Taber and Co. ...	Commended
Copenhagen Market ...	Sent by Watkins and Simpson, and introduced by Vilmorin, Andrieux et Compagnie ...	Commended
Barr's Autumn Exhibition Express ...	Sent, raised, and introduced by Barr and Sons ...	Commended
Wheeler's Imperial ...	Sent by H. W. Nutting and Son, and introduced by Vilmorin, Andrieux et Cie. ...	Commended
Veitch's Earliest of All ...	Sent by Watkins and Simpson, and introduced by Wheeler and Son ...	Commended
	Sent, raised, and introduced by R. Veitch and Son ...	Commended

The following awards were also made to Parsnips:—

LONG VARIETIES.

Webb's Student ...	Sent, raised, and introduced by E. Webb and Sons ...	Highly commended
Hollow Crown Improved Student ...	Sent by Barr and Sons ...	Commended
Model White ...	Sent by Alfred Dawkins ...	Commended
	Sent, raised, and introduced by Dickson's ...	Commended

INTERMEDIATE VARIETIES.

Tender and True ...	Sent by Barr and Sons ...	Highly commended
Intermediate ...	Sent by Watkins and Simpson, A. Dawkins, and Barr and Sons ...	Highly commended
Lisbonnais ...	Sent by Barr and Sons ...	Commended

SOUTHAMPTON ROYAL HORTICULTURAL.

NOVEMBER 2, 3.—The annual Chrysanthemum show at Southampton was held on the Royal Pier. Exhibits were not very numerous, but were on the whole of good quality.

A successful sale of exhibits was held at the close of the show, realising £34 for the Red Cross Society.

Plants were the weak feature of the show. Bush plants from the garden of J. C. D'ESTERRE, Esq., Elmfield Hill, Southampton (gr. Mr. Hosey), created the most interest, as they were well grown and freely flowered. Mr. ALLAN COOPER, Hill Lane, Southampton, an amateur, showed the best single-flowered varieties, freely blooming and bright in colour.

Cut blooms were of good quality. In the class for six Japanese varieties, three of each in one vase, there were five entrants. The best exhibit was that of M. GALE, Esq., Watley, Twyford (gr. Mr. W. H. Cole). The varieties Mrs. L. Wiggs, an effective light yellow bloom of large size, Kara Dow, Queen Mary and F. S. Vallis were noteworthy. Captain F. G. DALGETY, Lockerley Hall, Romsey (gr. Mr. W. Baxter), was placed 2nd. In the section for blooms displayed on boards, the last-named exhibitor was the winner in the class for not fewer than twelve varieties, with even, full-sized fresh examples of popular varieties. Mrs. T. Lunt, F. S. Vallis, Bessie Godfrey and Master James were especially meritorious. M. GALE, Esq., won the 2nd prize with smaller specimens.

In the amateurs' section for Japanese blooms, Mr. A. H. HILL, London Road, Southampton, was placed first for a dozen handsome blooms. Mr. TOFIELD, Chandlersford, was 2nd with a good exhibit.

Incurved varieties were numerous and creditable. In the open class, C. W. GREENHILL, Esq., Hamble Bank, Warsash (gr. Mr. W. H. Hoare), was placed 1st with Romance, Godfrey's Eclipse, and Mrs. P. Wiseman. In the amateurs' section Mr. A. H. HILL showed incurved blooms equal to those in the open class, good examples of popular sorts. Mr. TOFIELD was placed 2nd for almost equally meritorious specimens.

Decorative varieties in vases in masses made a good display. For four varieties, ELLEN Lady SWAYTHLING, South Stoneham House, Southampton, gained the 1st prize for an excellent group

of Source d'Or, Kathleen Thompson, Caprice du Printemps and White Cap.

Single-flowered varieties were also excellent. In the class for six, M. GALE, Esq., was placed 1st for Ceddie Mason, Florrie King, Altrincham Yellow and Marjorie Lloyd.

For one vase of any Chrysanthemum not disbudded, arranged with any foliage for effect, W. H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood), obtained the 1st prize for an effectively-filled vase mainly of single-flowered varieties.

In the decorative classes the exhibits were well arranged. Mrs. E. LADHAMS, Shirley, Southampton, obtained the 1st prize for dinner-table decoration, using yellow and bronze Chrysanthemums effectively associated with richly-coloured sprays of berried plants and foliage. Miss TAYLOR, Bemerton Rectory, was placed 2nd.

W. H. MYERS, Esq., showed the best cut Carnations in vases.

Exhibits of fruit were of good quality, but not numerous. The best white Grapes were sent by W. H. MYERS, Esq., and the best black by C. W. GREENHILL, Esq. ELLEN Lady SWAYTHLING showed the best three dishes of dessert Apples, and a similar number of kitchen varieties.

W. H. MYERS, Esq., obtained the 1st prize for a single dish of Cox's Orange Pippin, and for a dish of Blenheim Pippin in the class for any other variety.

Lady SWAYTHLING also won a 1st prize for three dishes of Pears. Mr. A. HENDY was placed 1st for one dish of Pears.

Vegetables were, as usual, excellent. W. H. MYERS, Esq., secured the leading award in the classes in which prizes had been provided by Messrs. Toogood and Sons and Messrs. Sutton and Sons, for six varieties. H. TRIMMER, Esq., Hookley House, Twyford, Winchester (gr. Mr. E. F. Hart), was placed 2nd.

The trade exhibits were attractive, and Gold Medals were awarded to Mr. E. WILLS, The Nurseries, Winchester Road, Southampton, for a miscellaneous exhibit of Heaths, Cypridiums, Codiaenums, Palms and Ferns; to Messrs. ROGERS and Sons, Bassett, Southampton, for a collection of Apples arranged with cut shrubs and trees; to Messrs. TOOGOOD and Sons, Southampton, for a collection of vegetables of good quality; and to Mr. B. LADHAMS, Shirley, Southampton, for hardy flowers and Roses.

WINDSOR, ETON AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 5.—The twenty-fourth exhibition of Chrysanthemums, plants, fruit and vegetables, which the above society held on this date in the Royal Albert Institute, Windsor, after the lapse of a year, was fully equal to expectations. The groups of Chrysanthemums were not so numerous as formerly, but the cut blooms in the chief classes were of great excellence and the collections of vegetables were also deserving of high praise.

OPEN CLASSES.

There were only two groups of "Decorative Chrysanthemums," and each exhibitor used single-flowered varieties. Mrs. E. B. FOSTER (gr. Mr. W. Cole) won the 1st prize with a graceful group, which was brightened by the use of well-coloured plants of *Acalypha Macaefana*, various *Crotons* and *Adiantum Ferns*. The 2nd prize was awarded to Lady TRESS BARRY (gr. Mr. A. Wilcox).

The class for eight vases of cut Chrysanthemums, three blooms of one variety in each vase, was particularly good, the competition for the 1st prize being very close. The King Edward Challenge Cup was won by Mrs. HAMILTON FELLOWS (gr. Mr. W. J. Smith), whose blooms were characterised by great breadth, unusual depth and high quality. The best were Miss A. E. Roope, Lady Talbot, Joan Stretton, Queen Mary and Mrs. E. A. Tickel. J. B. FORTESCUE, Esq. (gr. Mr. C. Page) won the 2nd prize, and the National Chrysanthemum Society's Certificate of Merit offered for the best bloom in the show with a superb flower of the variety R. C. Pulling. His examples of Bob Pulling, Mrs. Keith Luford and Master Rex were also splendid. Mrs. GERALD GOODLAKE (gr. Mr. W. Hearn) was awarded the 3rd prize.

Mr. J. B. FORTESCUE won the 1st prize easily for eighteen Japanese blooms, arranged with any foliage plants in a space of 5 feet by 3 feet. Although not the largest bloom in the collection a specimen of Pocket's Crimson was especially attractive; 2nd, W. C. ROMAINE, Esq. (gr. Mr. J. Guttridge).

Mrs. HAMILTON FELLOWS won the 1st prizes for six vases of single-flowered varieties and for a vase of twelve cut Chrysanthemums. Of the singles, Sylvia Slade, Geoffrey Peed and Marguerite de Quincy were very beautiful. Mrs. E. B. FOSTER won the 2nd prize. The vase of Chrysanthemums was of very large Japanese varieties, which, however, were not enhanced by the large fronds of brown Bracken placed in the vase. The most attractive arrangement was shown by H. HARTLEY, Esq. (gr. Mr. W. Holder), who associated bright autumn foliage with his blooms.

LOCAL CLASSES.

The following classes were open only to exhibitors residing in the society's district.

Mr. J. B. FORTESCUE won 1st prizes for six Japanese blooms in two vases, and for six incurved blooms in three varieties; the latter was a specially meritorious exhibit. Miss LANGWORTHY (gr. Mr. T. J. Broom) showed the best board of twelve Japanese varieties, and included very good blooms of Master James, Bob Pulling and Francis Rowe.

In the classes for amateurs who employ only one gardener the Lady Evelyn Mason Cup was won by Mrs. HARMAN (gr. Mr. Warner) with twelve praiseworthy Japanese varieties. The best six vases of singles were shown by Mr. W. C. ROMAINE.

The groups of miscellaneous plants were rather poor, and only the 2nd and 3rd prizes were awarded; the best group was shown by Mr. C. J. MURRAY. Competition was stronger in the class for six dinner-table plants, in which Lady TRESS BARRY, who showed splendid plants of *Cocos Weddeliana* and *Aralia Veitchii gracilima*, won the 1st prize, whilst Lieut. G. D. TURNER was 2nd.

There was only one exhibitor of six Begonias in flower, but Lady DALTON FITZGERALD (gr. Mr. W. J. Brown) was awarded the 1st prize for magnificent plants of *Begonia Gloire de Lorraine*. The best six Carnations in flower were

shown by Mr. H. HARTLEY, who had very healthy, floriferous examples.

The most successful exhibitor of cut Carnations was Mr. T. H. PLOWRIGHT, who won 1st prizes for a vase of six and in the Mr. A. F. Dutton class; whilst Major A. P. HENDERSON was similarly successful in the class for three vases of tree varieties.

FRUIT AND VEGETABLES.

Capt. the Hon. E. DAWSON (gr. Mr. J. Rackly) won 1st prizes for two bunches of white and two of black Grapes with large, shapely examples.

The class for six dishes of Apples, three dessert and three kitchen varieties, was particularly strong, though most exhibitors in this and the other Apple classes were guilty of polishing their fruits. The 1st prize was won by H. A. TROTTER, Esq. (gr. Mr. C. Frost) with a splendid collection, which included Ribston Pippin, Cox's Orange Pippin, Peasgood's Nonesuch and Lane's Prince Albert; Mr. A. GILLIAT was placed 2nd, and Col. R. W. FOLLETT 3rd.

Mr. J. B. FORTESCUE won the 1st prize for four dishes of Pears with splendid fruits.

The 1st prize in Messrs. Sutton and Son's class for a collection of vegetables was won by Miss LANGWORTHY.

Messrs. J. Carter and Co. also offered prizes for a collection of vegetables: Lady Tress Barry was the most successful competitor.

Messrs. Toogood and Sons also offered prizes for vegetables, in which Mr. A. E. WILSON won the 1st prize.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

NOVEMBER 3.—The annual general meeting of the above society was held in the Religious Institution Rooms, Glasgow, on the 3rd inst. Mr. D. G. Purdie presided. The committee's report and balance-sheet were adopted.

It was intimated that the sale of pot plants, fruits and flowers, held in connection with the show on September 1 and 2, had been a great success, and the directors had been enabled to subscribe from the funds the sum of £250 to the Red Cross Society, including £50 to the Bellahouston Hospital for "The Glasgow and West of Scotland Horticultural Society Bed." The sum of £50 had also been remitted to the City of Glasgow Soldiers' and Sailors' Fund.

It was reported also that the lectures and excursions had been well attended.

Sir John Stirling Maxwell, Bart., of Pollok, was re-elected president and the directors were re-appointed. Mr. Hugh M. Mackie, 124, St. Vincent Street, Glasgow, was re-elected secretary and treasurer.

DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS'.—The fortnightly meeting was held on Monday, the 1st inst., in the Abbey Hall, by permission of Messrs. Sutton and Sons. The subject for the evening was "Decorative Orchids," and was introduced by Mr. E. Jennings, Park House Gardens, Cotham, a member of the Bristol Society. Mr. Jennings gave practical advice on the cultivation of Cymbidiums, Cyrtopodiums and Miltonias. These Orchids he considered the best for decorative purposes, as the plants were evergreen. A feature of the meeting was a good display of fruit, flowers and vegetables from the members.

GARDENING APPOINTMENTS.

Mr. Charles Shaw, for several years Gardener to STEPHEN MITCHELL, Esq., Boquhan, Kippen, N.B., as Gardener to C. E. GUNTER, Esq., Tongwood, Hawkhurst, Kent. [Thanks for 2s. 6d., for R.G.O.F. box. —Eds.]

Mr. Patrick Hunt, previously Gardener to Sir NATHANIEL DUNLOP, Shieldhill Biggar, Lanarkshire, as Gardener to Lady NINIAN ORICTON STUART, Falkland Palace, Fife.

Mr. Arthur Caste, for more than 4 years Gardener at "The Butts," Harrow-on-the-Hill, and formerly Chief Assistant Gardener in Hams Hall Gardens, near Birmingham, as Gardener at St. Edmund's School, Canterbury.

Mr. J. Hughes, formerly Gardener to the Misses SALES, Pentre Mawr, Abergelle, as Gardener to GEORGE HARRISON, Esq., Bryntysilio, Llangollen, North Wales.

ANSWERS TO CORRESPONDENTS.

"There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then is to consult the good of others as well as of one's self."—*Gardeners' Chronicle*, No. 1, Vol. 1, January 2, 1841.

* * * NEW POSTAL RATES.—Contributors and correspondents are reminded that under the new postal rates, which came into operation on the 1st inst., letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopence, and thereafter at the rate of 3d. every two ounces.

BEGONIAS AFFECTED: J. P. There is no disease present in the Begonias: the injury to the leaves is due to an excess of moisture in the air of the house in which the plants are growing. You should provide more ventilation early in the day.

CHRYSANTHEMUMS DECAYING: E. H. The plants are attacked by a fungus known as Botrytis. A cause of the attack is excess of moisture in the atmosphere, which can only be corrected by introducing more air into the house, especially in the early part of the day.

CUPRESSUS MACROCARPA: C. G. Bailey. As you intend planting the trees of Cupressus macrocarpa in their permanent quarters as soon as possible, lift the plants at once, sort them into sizes, and lay them in the soil upright about 2 inches apart, either in a frame or a sheltered position out-of-doors. The roots should be trimmed, cutting back the tap-root and any other long ones. The plants should be left until next May, when they may be planted in their permanent positions if you consider they are large enough, or be set out in nursery quarters about 1 foot apart each way for planting permanently the next year. The following May the plants should be from 1 foot to 2 feet high, and the roots should then lift with a good ball of soil. Nurserymen usually grow this conifer in pots, to save the trouble and expense of annual transplantings.

DESTROYING THE STUMPS: G. Webster. You probably refer to the use of saltpetre for destroying tree stumps. Holes an inch in diameter are bored into the stumps to the centre. These are then filled with saltpetre and a little water, and tightly corked. After being left three or four months, the corks are removed, the holes filled with paraffin, and a light applied. The stumps are said to burn gradually away. Unfortunately the method cannot be relied upon. Of a number of large tree butts tried on one occasion, not a single one burnt to any considerable extent.

NAMES OF FRUITS: Webb. 1, Kerry Pippin; 2, Ross Nonpareil; 3, White Nonpareil; 4, Prince Bismarck; (Pear) Gansel's Bergamot.—W. Lane. Iris Grégoire, dessert; gather about the middle of October.—W. Thompson. 1, Withington Fillbasket; 2, Nanny; 3, Cox's Pomona; 4, Dutch Mignonne; 5, Lemon Pippin.—E. M. D. 1, Worcester Pearmain; 2, Dumelow's Seedling.—C. Best. 1, Nouveau Poiteau; 2, Emile d'Heyst; 3, Passé Colmar; 4, Huyshe's Prince Consort; 5, Marie Louise; 6, Beurré Bachelier.—Alves. 1, Royal Shepherd; 2, Ecklinville Seedling; 3, Peasgood's Nonesuch; 4, Blenheim Pippin; (Pear) Doyenné du Comice.—M. C. 1, King of the Pippins; 2, Beurré Bachelier; 3, Broad-End; 4, Délices d'Angers; 5, Winter Franc Réal.—A. J. G. Belgian Purple, Belle de Louvain, Bryanston Gage; Count Althann's Gage, Denbigh, Czar, Diamond, Jefferson, Monarch, Victoria, Rivers's Early Prolific, Belle de Septembre, Purple Gage, Green Gage (Reine Claude), Early Orleans, Washington.—R. C. S. 1, Beurré d'Anjou; 2, Easter Beurré.—T. Prowling. Beurré Bose.—J. Mills. 1, Gooseberry

Apple; 2, Blenheim Pippin; 3, Uvedale's St. Germain.—F. R. 1, Mabbott's Pearmain; 2, Joséphine de Malines; 3, decayed; 4, Bonne d'Ezée; 5, Louise Bonne of Jersey; 6, Marie Benoist.—J. E. H. 1, Yorkshire Greening; 2, Calville St. Sauveur; 3, Jolly Beggar; 4, Roi d'Angleterre; 5, Cellini Pippin; 6, Twenty-ounce; 7, Hollandbury; 8, Kentish Fill-basket.

PLANTING PEACH TREES: A. T. Four dwarf fan-trained Peach and Nectarine trees will be ample to plant against the back wall of your Peach case, which is 68 feet long. The intervening spaces will admit of a half-standard trained tree being planted between the dwarf-trained Peaches. When the wall space is nearly furnished with the growths of both description of trees the shoots of the standards may be reduced to make room for those of the permanent dwarf-trained ones. Moreover, the standards can be removed before being pruned too much, and transplanted in suitable positions out-of-doors, against walls having south, south-west, or west aspects.

RHODODENDRON MAXIMUM: B. L. We have never heard of using lime in the soil for Rhododendron maximum, but you could try it as an experiment. Often R. maximum does not seem to flourish, but in every case of failure it will be found that the plants have been lately transplanted. The specimens you noticed at Kew were planted last spring, and it will be interesting to observe their behaviour next year. When R. maximum is found to be doing well, the plants are well-established, and are growing in a partially shaded situation. Enquiries from growers and our own observation lead us to conclude that this Rhododendron does not transplant so successfully as the other members of the genus.

RHODODENDRONS: W. Hastings. Fork the manure into the Rhododendron bed before planting, as it is not advisable to allow it to remain as a top-dressing all the winter. The proper month for top-dressing the roots is May and June, after the sun has warmed the ground, when the litter will serve to keep the ground cool and moist during the hot weather. You could top-dress with advantage next summer, especially as your Rhododendrons will be newly planted. If the manure is well rotted it will be suitable for Rhododendrons, but they are soon injured by fresh, hot dung.

ROSES FOR FORCING: Inexperienced. Prune the Roses two or three weeks before introducing them into heat. After pruning the plants place them in a cold pit, keeping the lights closed excepting on very sunny days, and allow them to remain there until the new shoots commence to sprout. This refers to Roses lifted from the ground out-of-doors and potted. If you refer to established plants introduce the plants into a gentle warmth as soon as they are pruned. The more slowly the Roses are forced at first the more successfully will they flower.

WHITE FIG TREE NOT SWELLING ITS FRUIT: IV. Probably your Fig tree has been allowed to make unrestricted growth ever since it was transplanted, thereby preventing the numerous young fruits from developing and ripening. Towards the end of April next, when the tree begins to push into growth, thin the shoots to about 6 inches apart, retaining those that are short-jointed and have most embryo fruits. When the young growths have attained to a length of 18 or 20 inches, pinch out the points, and shorten all superfluous shoots to within a few inches of their bases. Train in the leading shoots between those of last and previous years. Lightly fork the surface soil 3 or 4 feet from the tree stem and place thereon a few inches thick of half-rotten manure as a mulch, and give the roots a copious watering. By deferring the pruning until growth begins, bleeding will be prevented.

Communications Received.—G. W.—J. H.—M. & N. of E. Sev.—W. H. W.—F. R.—R. S.—A. C.—S.—H. R. D.—H. S.—W. H. C.—F. J.—W. N. W.—M. B.—S. B. & S.—J. McE. T.—W. B. H.—R. C. S.—E. M.—J. H. S. C.—J. O'B.—A. D. W.—L. D.—M. H. D.—W. H. S.

THE

Gardeners' Chronicle

No. 1508.—SATURDAY, NOVEMBER 20, 1915.

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TRADE CARDS.

(See figs. 112, 113 and Supplementary Illustration.)

THERE are so many forms of collecting that the choice of a hobby becomes extremely embarrassing. The collectors of rare books and fine pictures are those who figure most frequently in the daily and other papers, but these hobbies are always costly and oftentimes dangerous from a financial point of view, whilst even the schoolboy's pastime of postage-stamp collecting easily develops into an expensive business. But there are many species of collecting from which a great deal of interest and instruction may be derived without an unreasonable demand on the purse of the man of small means.

Trade cards, for instance, while apparently offering a limited scope, in reality cover every phase of commercial activity. The hobby has one advantage over most others, in that it involves very little strain on the intellect, and does not necessitate the long preliminary study involved in the collecting of early printed books, or the manifold geographical and other knowledge essential to philatelists. Unfortunately, the opportunities for collecting old trade cards are now very few. Until a quarter of a century ago a number of small booksellers and print dealers existed in many of the side streets off Holborn and the Strand who made a special feature of sorting out such things from the masses of pamphlets, broadsides, and so forth which drifted from the auction rooms into their possession. For a few shillings one could buy a large parcel of trade cards. But that particular class of book and print seller seems to have almost completely disappeared, and when such wares get into the hands of the more aristocratic type of dealer they attain to the dignity of a catalogue, and the prices go up accordingly.

The most extensive collection of trade cards and early shop bills in existence is probably that in the British Museum, and this, which extends to nearly 4,400 prints, was formed by, or once belonged to, Miss Banks, the "eccentric and indefatigable" sister of Sir Joseph Banks; and the compiler of the history of any trade will find it of the greatest historical value. One of the most assiduous of modern collectors was the late Mr. J. E. Hodgkin, who indeed collected everything except pictures, as may be seen from the three fine volumes entitled *Rariora*, in which he published notes on the various things which he collected from 1858 to 1900. Mr. Hodgkin died at the age of eighty-three in October, 1912, and his collections were dispersed at Sotheby's last year. His trade cards occupied nearly the whole of one day's sale, and comprised illustrations of nearly every conceivable business carried on in London and the provinces during the eighteenth and the early part of the nineteenth centuries. There were about 3,000 pieces (including 200 billheads); the small number of these which have come into my possession relate exclusively to dealers in seeds and plants.

To anyone at all interested in the history of horticulture in its many ramifications these little landmarks will not fail to appeal. They possess, moreover, an artistic interest, for during the best period leading artists and engravers, such as Hogarth, Bartolozzi, Vivares, and others were employed in their production. They were for the most part executed by those who made a speciality of designing book-plates—another phase of collecting around which a large body of literature has sprung into existence within recent years.

Mr. Hodgkin's earliest trade card was the handbill of an anonymous moneylender in Holborn of about 1630, or over a century earlier than the first trade card of the industry with which we are now more particularly concerned. There may be yet earlier trade cards than that of Henry Scott, of Weybridge, which forms the subject of the Supplementary Illustration (reproduced by permission of Mr. T. Thorp, bookseller, of St. Martin's Lane, London), but it is not at all likely that there is a handsomer or more imposing example. From the inscription it will be gathered that the design is Scott's own, drawn for him by Samuel Wale, who was one of the foundation members of the Royal Academy (he died in 1786), whilst the engraving was done by François Vivares (1709-1780), a well-known Frenchman who settled in London. The youth holding up the Pineapple may indeed be a somewhat idealised portrait of Henry Scott himself. The plate, which has an engraved surface of 11 inches by 8½ inches, is a very interesting document in the history of the trade, and the fact that the text is in French as well as English indicates that Henry Scott had customers in France as well as in England. The term "nurseryman" was evidently not yet in general use, and the importance of Pineapple cultivation is indicated by the declaration that he had cut ripe heads

"every week for fifteen months pass'd and shall cut until ye latter end of Octor." The plate is dated October 1754; no biographical details of Henry Scott have been found, and his death is not recorded in the *Gentleman's Magazine* up to 1800, although he must have been a very well-known horticulturist.

The next in point of date as well as in artistic quality is that of James Scott, of "Turnham Green, near London" (and reproduced in fig. 112 by permission of Messrs. Ellis, booksellers, of New Bond Street). This was designed by Pierre Bourguignon—evidently a French artist, of whom the usual dictionaries of artists make no mention—and engraved by Vivares. Probably the two Scotts were related, far apart as were their places of business. At all events they were contemporaries. Thomas Knowlton (1692-1782), writing to Dr. R. Richardson on July 23, 1754, observes: "This day's post brought me a letter from Mr. James Scott, of Turnham Green, and tells me he has published a cutt [i.e., plate] of the Sarracen or side-saddle flower, which grew in his garden. . . . He says he expects the magnificent *Nymphaea* next Christmas, by a shipe from North America. If you remember, I told you of it: he had seeds, but not one come up: he tells me Dr. Watson and Mr. Collinson [? Collinson] is well."* From this it is clearly evident that James Scott had a well-established business, and was in correspondence with the leading gardeners and botanists of his time; but of his origin, and of even the date of his death, no record has been found. Both the Scotts were essentially what we should now describe as seedsmen and nurserymen, whilst James Scott undertook the erection of "new invented fire walls to raise early melons and cucumbers free from the watery quality they have in wet seasons." He, too, made a speciality of Pineapples or "Ananas," claiming to send the plants "in health and ripe fruit in perfection any journey of sixteen days." One can only wonder how in those primitive days Mr. Scott managed it.

Another trade card, severely simple and without pictorial embellishment of any kind, was issued by Leonard Philipps, jun., one of the most prominent London nurserymen of his day, and, in a small way, something of an author. He published not only a *Catalogue of Fruit Trees for Sale*, 1814, but *Transactions in the Fruit Tree Nursery, Vauxhall*, 1815. His grounds were within a few minutes' walk of the famous Vauxhall Gardens. He appears to have been an advanced and enthusiastic cultivator, and, if his "experimental horticultural and agricultural grounds" were such as would now be understood by the term, a pioneer. His name appears in the *London Post Office Directory* for 1831, and probably later as "arborist, experimental horticulturist and agriculturist," at the "2 Mile Stone, Portsmouth Road, near Vauxhall," still as "Leonard Philipps, jr." The district, when he first established himself there, was one of the most pleasant of the

* Letter quoted in Dawson Turner's edition of the *Richardson Correspondence*, 1835 pp. 418-9.

rural spots around London, and he lived there long enough to witness the beginning of what is now a squalid and uninteresting congeries of brick, mortar and mud.

A seedsman's billhead nearly a century and a half in age may well rank as an uncommon curiosity, that of James Gordon, dated March 28, 1768, and if his name did not betray the country of his origin, the sign and pretty device would leave no doubt on the matter. The name of the client, "Mr. Wm. Innes," also suggests Scotland. The most famous tradesman of this name at that period

the same, remarks: "The only man that makes a figure in raising plants for sale is Mr. Gordon at Mile End, on the Essex Road. He has a peculiar skill and fortune in raising a great variety of rare hardy Exotic seeds, both from America and Europe. I have not spared to assist him." He was the James Gordon, sen., "botanist and gardener," whose death was announced in the *Gentleman's Magazine* as having taken place at Barking, Essex, on December 20, 1780.

The James Gordon of our billhead was probably a son of the famous "botanist and gar-

century, and how much longer only a careful inspection of the successive issues of the *London Directory* would reveal.

The provincial seedsmen and nurserymen were not behind those of London in the matter of engraved trade cards and billheads. In one sense the most interesting of these is the fine billhead of Thomas Sutton, of Leicester, whose name suggests that of the famous firm established at Reading. But Thomas Sutton did not confine his attention to seeds: he sold snuff, ironmongery, toys, jewellery, and so forth. It is difficult to imagine a more miscellaneous assortment, and, from what little we know of the shops of the late eighteenth and early nineteenth centuries, Mr. Sutton's must have been a bewildering chaos to all but the proprietor. Still, his billhead is a fine specimen of the engraver's skill, and perhaps the only tangible proof of Thomas Sutton's existence as a seedsman.

The trade card of Richard Smith, of Worcester, a fine example of script engraving, dating from the early part of the last century, is of a firm which, it need hardly be added, is still flourishing. It is not clear whether the Richard Smith who was born in 1748, who settled in Worcester in 1804, and who died at Beeston in 1810, was the founder of the firm, or whether it was started by his much more famous son and namesake, who was born in 1780 and who died on August 8, 1848. At all events, it was the latter who brought the business to a high stage of importance and made a fortune out of it.

Finally, we have the very pretty trade card of a Birmingham firm, Messrs. Brunton, Forbes and Hunter, whose seed shop was at 25, High Street and whose nursery was at Perry Hill. The plate was engraved by Howe, and is as tasteful a design as a firm of this description could select. There are two forms of this card—or rather of the text—for after a time Brunton and Forbes appear to have retired, leaving J. A. Hunter in sole possession (see fig. 113)—or there may have been a dissolution of partnership. At all events, Hunter's shop was at 18, High Street and his nursery at Hockley.

It is, I think, rather remarkable that the nursery and seed business is rarely continued in one family for more than three or four generations. Many banking firms in London, several auctioneers such as Christie and Sotheby, publishers such as Longman and Murray, with a number of other trades, show an unbroken history of from one and a half to two centuries. In some instances, such, again, as Christie and Sotheby, the firms no longer contain even indirect descendants of the original founders, although the initial names have been retained. But it may be questioned if any existing nursery and seed business in London can claim to have been established during the first quarter of the last century. W. Roberts.

THE BULB GARDEN.

CROCUS IRIDIFLORUS.

ALTHOUGH not the most showy species, *C. iridiflorus* (syn. *byzantinus*) is probably the finest of all the true autumn Crocuses. The form of the flowers gives rise to the name of *iridiflorus*, inasmuch as the small size of the inner compared with the outer segments gives the blooms the appearance of an Iris. So marked is the difference in the form of the flower from that of other species of *Crocus* that it was suggested to place the plant in a separate genus, to be called *Crociris*. The colouring is exquisite—a combination of purple and lilac, the inner segments being lighter than the outer. The white filaments, orange anthers, and purple stigmata add much to the beauty of the cup. Being naturally a lowland plant, it grows well in gardens and is suitable for planting in borders, beds, grass, or the rock garden. S. Arnott.



FIG. 112.—NURSERYMAN'S TRADE CARD OF THE EIGHTEENTH CENTURY.

(See p. 317.)

was James Gordon, sen., the nurseryman of Mile End, who, according to Lysons, introduced *Sophora japonica* into English gardens, and whose name is handed down to us in the genus *Gordonia*, Ellis. He was a correspondent of Linnaeus, and is referred to in Peter Collinson's letter to Dr. R. Richardson, August 12, 1742: "Mr. Gordon has also had flower *Obeliscotheca* with a red flower: he is the only gardener now left that has a good stove; but, now Lord Petre is gone, I am afraid all stove plants will go down." On April 4, 1746, the same writing to

dener" of Mile End, if indeed he was not the same man. The *London Directory* of 1781 has the firm of Gordon and Dernier as seedsmen at 25, Fenchurch Street; in the issue of 1793, the firm of Gordon, Dernier and Co. was still at the same address, whilst Gordon, Dernier and Thomson were given as in business as nurserymen at Mile End; in 1803 the firm was Gordon, Dernier, Forsyth and Co., but by 1822 the name of Dernier had disappeared, the firm continuing at the same address until 1831, and probably later. It thus existed for close on three-quarters of a

Supplement to the "Gardeners' Chronicle."

Explanation.
Knowledge and labour assisted by various Elements preventing the spirit of Winter with it various sorts of Fruits which are of product of the coldest climates.



Pine Apples, raised and sold by
Henry Scott Gardener, at Weybridge,
in Surrey.

Where Persons may be supplied with ripe Fruit during their Season, -
and Plants of all Sizes, are Sold at the Lowest Price. -
And as the Chertsey Coach goes every day from thence to London,
so ripe Fruit may be easily sent by that Conveyance and Plants -
may be safely sent by the Weybridge boats to London twice a Week.
At the same Place are sold garden's tools, beds, Mats, fruit trees, flowering
- Shrubs, and Green House Plants.
He also undertakes the Building of Green houses, Stoves, and Fire Places, -
and performs any sort of Work in Gardens.
Letters directed to him will be punctually answered, upon notice he -
will attend on Gentlemen, either in Town or Country. He has cut ripe Pine Apples
every Week for 15 Months, which shall not usually last beyond of Peter.

Henry Scott,
Jardinier, à Weybridge, dans la
Comté de SURREY.

Ici se vend des Ananas. On trouve chez lui de fruits murs -
pendant leur saison en com me aussi des plantes de toute grandeur
au plus bas prix. Et comme le Carrosse de Chertsey va tous les jours
à Londres, on peut aisément envoyer des fruits murs par cette -
Voiture de même ceux qui voudront avoir des Plantes pouront
sans peine les faire venir dans leurs serres par les
BATEAUX à WEYBRIDGE.
Il entreprend aussi de bâtir des serres, fournaux & Murailles -
à feu & fait toute sorte d'ouvrage dans les jardins.
Il répondra également à toutes les Lettres qui lui seront adressées -
& chant avec il envoie les Personnes en son Ville soit la campagne,
according to the City of Paris.

AN EIGHTEENTH CENTURY TRADE CARD.

THE ROSARY.

THREE GOOD CLUSTER ROSES.

MOONLIGHT is a delightful, perpetual-flowering cluster Rose of semi-climbing habit. At this date (November 3) the sprays of Moonlight-tinted blossoms are very attractive. They are semi-double, exquisitely beautiful in the half-open stage, whilst the dark claret-red wood and olive-green foliage contrast well with the blossoms. I have the plant growing as a shrub, for stakes only mar the beauty of this type of Rose, which should be allowed to grow naturally.

Danaë, too, is very lovely just now. The blooms are a pale yellow, and are produced in clusters. This variety is most continuous in flowering.

Adrian Reverchon is another attractive variety, with flowers after the style of Leuchtstern; but the panicles of bloom are superb. The trusses often measure 18 inches in depth and comprise 50 blossoms elegantly disposed, so that a single spray placed in a deep vase makes a beautiful floral ornament for the table. One could wish that these perpetual-flowering shrub Roses possessed a more rampant growth, so that they might be used for covering arches; but they partake of the nature of their common parent, Trier. Perhaps in time raisers will give us real perpetual Ramblers. *Experience.*

WICHURAIANA ROSE PURITY.

SOME correspondence has recently taken place on white Roses as climbers. There is a Rose that has several times been exhibited at the N.R.S. shows, though I am uncertain whether it is yet in commerce. It is called Purity, and is well worth attention. I noticed a plant this October with quite a large number of flowers on it: not, indeed, so many as at the summer flowering, but enough to make it appear probable that it is a true second flowering. The flowers are of medium size, large for a Wichuraiana, and semi-double. When picked young and allowed to open indoors, the yellow anthers give the flower an additional attraction. The plant appears to be a good grower and not much troubled with disease. *White Rose.*

FRUIT REGISTER.

APPLE TREES AND CANKER.

THE opinions expressed in the article on the subject of varieties of Apples especially subject to canker (see page 286) coincide almost wholly with my own. Insufficient drainage, want of deep trenching, and a cold, heavy soil are the main causes of canker. I know so-called experts (mainly scientific teachers, who have gained their knowledge in some horticultural school where the blackboard and diagrams have played a larger part in their education than the fork and pruning knife) do not agree that the above are the causes of canker. They incline rather to belief in the floating-germ theory. These germs are supposed to be anxiously waiting until some careless mortal shall inflict a wound on the bark of the tree, when they pounce with alacrity on the opportunity to spread themselves over the abrasion. These scientists fail to grasp the real cause of canker, which is unhealthy rooting conditions. How can a tree flourish when the prime factor of growth—the root—is clogged with impurities caused by stagnation of water, cold, and a general lack of healthy conditions? A badly-cankered tree of Cox's Orange Pippin, for example, can be cured and rendered quite healthy by replanting in warmer soil and the removal of the excretions, to be replaced by a coating of gas-tar, as noted by Mr. Gardner. *E. M.*

ORCHID NOTES AND CLEANINGS.

DENDROBIUM PHALAENOPSIS.

THE graceful beauty of this Dendrobium and a good example of its effect when well arranged were well demonstrated in the artistic group for which Messrs. J. Cypher and Sons, Cheltenham, were awarded a Gold Medal at the Bournemouth Show on November 2. Many gracefully-arching spikes of pretty rose-coloured flowers of various shades were arranged to droop over the body of the group, composed of showy Cattleya labiata, C. Fabia, C. Armstrongiae, C. Bowringiana (including the deep purplish-red variety, atro-sanguinea) and other Cattleyas, Laelio-Cattleyas and Brasso-Cattleyas. A representative collection of good Cypripediums and plants of many uncommon species was included, and in the more elevated parts fine examples of Oncidium varicosum and O. oblongatum, with their slender sprays of yellow flowers, were very effective. The group was, indeed, one of the most attractive in the exhibition.

Messrs. Cypher grow Dendrobium Phalaenopsis very successfully suspended in a warm, moist house, some of their plants being of the original importation.



FIG. 113.—J. A. HUNTER'S TRADE CARD.

(See p. 318.)

PLANT NOTE.

SOLANUM ACULEATISSIMUM.

THIS species, the fruits of which were illustrated in the last issue, fig. 111, is one of a large number of species of shrubby Solanums which are common in the Tropics. It was described and figured by Jacquin in his *Collectanea*, I., p. 100, and is known to be widely distributed in Tropical America, West Tropical Africa, etc. In a wild state it grows about 2 feet high, has branching stems furnished with straight spines and bristles, ovate-lobed leaves 4 inches long, with spines along the principal nerves on the upper surface. The flowers are star-shaped, white, in axillary cymes. The fruit is globose, smooth, orange-coloured and an inch in diameter. In cultivation the plant grows a yard or more high and the fruits are about 2 inches in diameter. When ripe the skin is thin and parchment-like, and it contains a large number of small flat seeds. The branches are cut and used for decoration in the same way as the Bladder Cherry, *Physalis Franchetii*. The plant is figured (Plate 1,988, Vol. 19) in *Flore des Serres*, but the plate fails to do justice to the decorative merits of the berries. *W.*

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

*XX.—WOLVESDEN PASS.

I WILL not tell the tale of how I first crossed Wolvesden Pass in a blinding snowstorm that filled the air and covered the ground and allowed me to see nothing at all of earth or its promises. The Da-Tung Alps are a big and broken chain of serrated masses, running east and west, cut, on the south front, by a succession of rivers, debouching in vast fan-shaped plains of pasture or culture, according as the territory be Chinese or Tibetan. Even these plains are at some 10,000 feet, and the peaks rise 6,000 or 7,000 feet higher yet, sharp cones of primary rock, as unlike as possible, in their rather monotonous jags, to the violent splendours of the Dolomitic Min S'an and Sutani ranges. But the geological confusion of the Da-Tung Alps is quite grotesque. The river boulders are all of granite, the base is of conglomerate hard as iron, black shales far overhead suggest the coal which this district yields, red shales suggest iron, grey shales granite, the main mass is igneous undoubtedly, and in the middle, at a wild tilt, bursts up a huge bulk of what I can

only call Dolomitic limestone. Their slopes are absolutely devoid of forest, but on the cool northerly side of each valley and slope of each fold is a thick scrub of Rhododendron; while the south side is occupied by coppice of an ugly and abortive-looking Cupressus, whose fragrant boughs make incense for the Buddhas.

Wolvesden Pass cuts through the heart of the chain at some 13,000 feet. It is probably the Sadsioroksum of Przewalsky, but I adapt a less cumbersome name from the glen into which it descends on the north side, a long deep trench called the Valley of Rocks and Wolves. It was on a cloudless day that I crossed it a second time, and having made the circuit of the district, and visited all the big abbeys, got back again to my starting-point in the southward-facing plain at the foot of the mountains. Now all was green where all before had been white; less awfully magnificent, but less awfully uncomfortable. My day began well, with a new little starry Trollius in the plain, and cheerfully I ambled up the windings of the gorge, carefully

* The previous articles by Mr. Farrer were published in our issues for September 12 and 20, October 17 and 31, November 14 and 28, 1914, January 2, February 27, March 29, April 10 and 24, May 1, 15 and 29, June 12 and 19, July 3 and 10, and November 13, 1915.

led on a string. For when my mind is roaming far slopes after flowers and utterly absorbed, what remains of me is otherwise too much at the mercy of sudden movements and stumbles on the part of that incalculable engine, the horse. Ere long I came to the great up-burst of Dolomite, and got off, to adventure up a little ghyll where yaks were feeding, in the hope of new flowers on the limestone. Up to the foot of the sunny wall I climbed first to see what might be had; all the slope was pink with *Androsace*, and *Incarvillea* flamed in splashes of crimson here and there on the stark precipice. And then a musty blur of purple and yellow took my eye, and after a moment of scorn for the dinginess of *Oxytropis* I suddenly realised that my eye was on a new *Iris*.

A queer little *Iris* it is, bearing (apparently from the same tuft very often) flowers of clear sulphur yellow and of a dull husky purple. Its pollen is white, it has a golden beard, it tucks its falls stiffly back under the bloom, and wonderfully suggests—alike in habit and packed abundance of blossom—a small *I. chamaeiris*; or, still better, the real *I. pumila* as you see it along the ledges of *S. Raphael*. The purple form is dim and rather ugly, but the yellow one is really attractive in a good clump of blooms squatting tight over the blunty and rather glaucous leaves. Only there have I yet seen it, clinging in little wads along the shelves of that hot limestone precipice, and give it therefore in my mind for the moment the name of *Iris kremnophila*. So, harvesting this (it was nearly over on June 5, and I could only find three or four buds), I descended to the ghyll and turned up into its cold shade, where big snow-pats were still lying. At once a new pinkness illuminated the dark cool ledges of moss and moisture. It could not be *Primula stenocalyx*. It was *P. urticifolia* (see fig. 114).

Somehow the suggestion of "Nettle-leaves" creates in one's mind the image of a rather coarse and dowdy plant. On the contrary, *P. urticifolia* is a most brilliant and dainty little beauty, and its leaves—so far from having the faintest resemblance to a Nettle's—are wee fringy affairs; so like those of *P. bella* that at first one looks to see if indeed the throat be not blocked with a fuzz of white hairs. But one need not go so far for a match to *P. urticifolia*; for in a word it is simply *P. minima* gone over into Asia and got a little solidier in the star and pinker in the face. True, it is soft and tender in texture, it has a tiny stem which often bears two or three flowers, it does not run and ramp, but grows in small tufts. Yet its whole effect, lying in blushing blotches along the moss-wads of the cool moist cliffs, is just that of a less ragged and aniline *minima*, as *minima* lies in vinously blushing drifts along the ghyll-ledges above the Glocknerhaus. Imagine a hybrid of *minima* and *bella* and you will get no very misleading notion of *P. urticifolia*. Here it seems certainly to be happiest on the limestone, and in no case is it found anywhere but in damp chinks and clefts of deep combs and northward facing rocks. In similar conditions—though in similar conditions only—I should judge that it ought to be prosperous at home. It passes an intense dry winter, frozen hard in snow, yet has no menacing down to forewarn us that it insists on such an unbroken resting-time on pain of death. But I should feel more sure of it if its leaves were leathery.

Yet another treasure, however, did that gorge supply, though all the herbage on these hills continues pale and sere as in March. A few yards further, and on the deep slope of moss behind the buttress, and stalwart in the cliff above, I became aware of a most glorious *Primula*, so closely akin to *P. nivalis* that perhaps it will prove only a variety of that polymorphic plant. Certain it is, alas, that it has the typical *nivalis* neck-stock, deep and tunicated and as

fat as a Leek, though not with quite the ungettable length of *P. Purdumii*. From this unfolds a big cabbage of leaves, upstanding and outstanding, notably big and broad, not revolute or strap-shaped, glossy green (though sometimes powdered) on the upper surface and densely white on the lower, with deep denticulations round their oval-pointed outline. Amid these, with them or after them, arises a powdered scape of 6 to 8 inches, carrying a head of large, half-pendulous flowers, quite singular in their beauty, having broad retuse lobes, and being of so very pale a rose-lavender as to be almost grey, fading to a marked white centre, with a misty bull's eye of intense black purple from the sombre throat. Of their sad and startling loveliness I can already speak with confidence as of their delicious scent. Otherwise *P. sp. "moesta"* can only be suggested from the two precocious specimens that I could find in reach. Later on, I shall hope to return more adequately to this stately subject and set it more faithfully before your eyes. In these Alps it seems to like cool and shady cliff-ledges and ghylls; though how on a cliff-ledge it manages to find room for its great Leek-like trunk (from the butt of which emerge only a few very fat white roots like stiff spaghetti) I am at present quite unable to imagine. Nor do I dare as yet to hope that it will prove an easy plant to grow, though I am encouraged to do so by reading that the even more impossibly-rooted *P. Purdumii* is still in cultivation. *Reginald Farrer*.

NOTICES OF BOOKS.

COMMERCIAL CARNATION CULTURE.*

THIS work, which represents a serious attempt to collect all the best recent opinion on modern *Carnation* cultivation, is written in particular for American commercial *Carnation* growers. A work on *Carnations* which has for its contributors such well-known American growers as F. J. Ammann, A. F. J. Baur, S. J. Goddard, Chas. W. Johnson and A. A. Pembroke must contain valuable matter, while Geo. W. Allwood and L. J. Cook write on *Carnations* from the British standpoint with abundant knowledge.

In Chapters I. and II. the editor has collated a quantity of information regarding the history and development of the *Carnation*. The chapters dealing with the early work of the American growers are excellent, but some of the others are lamentably weak, and the anonymous writers of these particular chapters lack any real knowledge of their subject. In Chapter XV. (on insects, diseases and other pests) the writer devotes several pages to descriptions of various pests and diseases, but gives in some cases absolutely no remedy.

The book cannot be regarded as a complete, up-to-date work upon the American *Carnation*. The editor has not marshalled his forces to the best advantage. If each writer had written his separate chapter under his own name, some repetition would have been avoided, and much greater importance given to each subject. However, the book will serve a useful purpose. No plant has developed of recent years more rapidly than the *Carnation*; old books upon the subject are no longer sufficient, and new works are required if the literature of the flower is to keep pace with its development. *Commercial Carnation Culture* will have considerable interest for British growers, though its main sphere of usefulness will lie in America. It is well printed and illustrated, and the information which it contains will ensure it a place on the shelves of all those who grow or study the *Carnation*. *M. C. A.*

* *Commercial Carnation Culture*. Edited by J. Harrison Dick. (New York: A. T. De La Mare Printing and Publishing Co., Ltd.) Price \$1.50.

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

EARLY PEACH TREES.—Houses containing early varieties of *Peaches* intended for forcing should be closed in preparation for starting the trees. Examine the border, and if the soil is the least dry soak it with tepid water. Only in very severe weather should fire-heat be used for at least the first three weeks. The degree of forcing depends on the date on which ripe fruits are required. Trees that have been forced for a number of years past will be much more likely to respond to gentle forcing than those forced for the first time. The house should be kept closed, unless the temperature rises to 55°, when the top ventilators should be opened a little, not with the view of reducing the temperature, but to prevent its rising. As soon as the buds show the slightest signs of growth use a little fire-heat and increase the amount as the buds develop. Maintain a night temperature of from 40° to 45° by day. The thermometer may rise to 60° before admitting air. Damping the borders and the spraying of the trees must be regulated entirely according to the weather.

POT FIGS.—Trees intended for early forcing should be placed indoors at once. Those that were not top-dressed during the resting period should be attended to at once. Carefully wash the shoots with Gishurst Compound, taking care not to injure the young fruits; also see that the house is cleansed thoroughly. A temperature of from 45° to 50° will be ample for a time, as forcing must be very gentle at the beginning. Meantime, make up a hot-bed of Beech or Oak leaves, intermixed with a quantity of stable litter and, as soon as the buds begin to move and the heat of the bed has declined to about 65°, plunge the pots in it. Maintain a night temperature of 50°, allowing it to rise to 60° in the day with sun-heat. In the earlier stages of growth the roots must be watered carefully, while the trees should be syringed only on fine days. As growth advances the amount of atmospheric moisture should be increased, but even then great care must be exercised, as a moisture-laden atmosphere during cold weather would cause the young fruit to drop. Any extreme, whether of dryness or dampness, must be guarded against until the fruits have set.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

DENDROBIUM.—Plants of *D. thyrsiflorum*, *D. densiflorum* and their allies that have finished growing should be placed in a drier house, where the temperature averages 55°. Sufficient water is needed at the roots to keep the pseudo-bulbs from shrivelling.

BULBOPHYLLUM AND CIRRHOPETALUM.—Some of these plants are the most peculiar and quaint of Orchids. As a rule they are easily cultivated, and many may be grown successfully suspended from the roof-rafters of the warm or intermediate houses. In a collection the different members need repotting at different times, so that the work is done at intervals throughout the year. The best time for repotting is when roots develop from the growth of the current season. The rooting medium should consist of *Osmunda*-fibre, peat, and *Sphagnum*-moss in equal parts. Pans and teak-wood baskets are suitable receptacles, and they should be filled about half their depth with drainage material, as the majority of the plants are more or less surface rooting. When the pseudo-bulbs are fully matured, the plants need a decided rest. Such plants as *Cirrhopetalum robustum* will not need water for several weeks together, but the smaller species require water more frequently, to prevent the pseudo-bulbs from shrivelling greatly. Throughout the spring and summer the plants should be well protected from direct sunlight, but as autumn approaches more light is

beneficial, especially to plants finishing their season's growth.

CALANTHE.—Deciduous *Calanthes* will soon be producing a good display of blossoms, and the foliage on the early-flowering kinds will now commence to fall. Very little water is required at the roots, but it is not wise to allow the compost to become excessively dry until the spikes are cut. Certain houses are drier than others, and this fact must be considered in watering. Small pseudo-bulbs should not be allowed to flower, and next season's growth will be benefited by allowing the pseudo-bulbs a longer rest. The later flowering varieties, such as *C. Regnieri*, will retain their foliage for some weeks to come, and until the leaves begin to show signs of maturity the roots must be well supplied with water.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORR ROTHESCHILD), Buckinghamshire.

PRUNING.—As both the Cherry and the Plum fruit on spurs as well as on the young shoots of the previous year, their methods of pruning are similar, and may be considered together. Fan training is, as a rule, preferable to any other method for these stone fruits, and the branches should be 6 or 8 inches apart, according to their strength and the size of the foliage of the particular variety. If the trees are in a healthy condition and have plenty of fruit buds on the young wood—that is, the shoots of the current season—the largest of the spurs may be removed, or very much thinned, as fruit produced on the young wood is usually superior, both in size and flavour, to that produced on spurs. Old trees are apt to form spurs in clusters; these should be carefully thinned, cutting away the parts farthest from the wall, and retaining those nearest to it. The Morello Cherry fruits chiefly upon the young shoots of the current year, or on close spurs formed on the two-year-old branches, and should be pruned and trained much in the same manner as Peaches or Nectarines. The Fig may be trained in any way, but usually the tree is grown in fan shape. Thin out all superfluous shoots, remove the older branches, and train young growths in their places. An important point with this fruit is to keep the roots in a restricted area. The soil should be light in texture, and the subsoil porous. The principal failure with Figs in this country is due to planting the trees in unfavourable situations: the warmest and best site in the garden should be allotted to them. The grower should endeavour to obtain short-jointed growths, for these will ripen well before the winter. Luxuriant growths should be discouraged, as they are never satisfactory. The Gooseberry fruits on spurs, the young shoots, and those of two or three years. The best fruits, however, are usually obtained from the shoots of the previous year. The Gooseberry may be pruned at any time from November till February, as is most convenient. A sufficient number of young shoots should be retained at equal and moderate distances, and for their full length, unless they are unduly long. The bushes should be open in the centre, to allow the sunlight and air to enter. Suckers proceeding from the stem or roots should be removed. Too often Gooseberry bushes are crowded with growth, become worn out in a few years, and produce berries of inferior quality. Finches destroy the buds, therefore where these birds are numerous the bushes should be protected from them after the plants are pruned. Red and White Currants may be pruned in an almost similar manner to the Gooseberry; the difference being that the leading shoots should be shortened about one-third, according to their strength and position. Black Currants require little if any pruning beyond thinning the older branches. Apricots may be pruned from the fall of the leaf until the end of February, during mild weather. Remove all old branches not furnished with young wood or healthy spurs, and train in well-placed lateral growths to furnish a supply of young, fruitful wood. Strong shoots should be reduced about one-fourth, and the weaker ones shortened to one or two buds, which will induce the tree to form plenty of

lateral shoots the ensuing summer from the lower eyes. Always prune to a wood bud, and never below the blossom buds, except to produce a wood shoot at the base of the branch. Old trees frequently form thick clusters of spurs; these should be thinned from time to time, or cut away entirely if the tree is producing the necessary number of young growths.

PLANTS UNDER GLASS.

By F. JORRAN, Gardener to Lady NUBURNHOLME, Warter Priory, Yorkshire.

TUBEROSE.—A few bulbs of these sweet-scented flowers should be potted either singly or two or three together. The rooting space should be restricted, for the roots are impatient of too much moisture, especially when they commence to grow; for this reason the single bulbs should be in pots no larger than will conveniently hold them. The compost should consist of a mixture of fresh loam, leaf-mould and sand. Drain the pots well and make the soil moderately firm, leaving the crowns well above the soil. If the soil is moist, water will not be required until after roots have developed. As soon as the plants have a moderate amount of root fibres they may be grown in a temperature of about 65°, and a gentle bottom heat will encourage the development of both roots and leaves. After the latter have begun to grow freely water the roots, increasing the amount as growth proceeds.

CARNATIONS.—The plants have come into flower rather earlier than usual, owing probably to the exceptionally mild autumn. Do not over-water the plants, or allow the roots to become excessively dry, as the plants are in full growth, and the pots filled with roots. Soft water is best. Weak stimulants may be used twice a week. Guard against infestations of thrips and red spider, as these pests soon check the growth and injure the flowers. Admit air freely in favourable weather, exercising due caution in this matter. Fire-heat should be used sparingly and chiefly for the purpose of keeping the atmosphere sweet and assisting the flowers to expand. A close atmosphere is favourable to the development of rust and other diseases. Now is a good time to insert a few cuttings to furnish plants for early flowering: the main batch of cuttings should be rooted in January. Continue to disbud, stake and tie the plants.

SOUVENIR DE LA MALMAISON (CARNATIONS).—The weather has been most favourable for Malmaisons, as it has been possible to have the ventilators opened both night and day. Water the roots carefully, keeping the soil on the dry side for the next two months. Watch carefully for the presence of rust on the leaves, and apply a suitable fungicide as soon as the disease is detected.

RESTING BULBS AND TUBERS.—The different kinds of bulbs and tubers which are resting should be examined at short intervals to see that they are neither too hot nor too cold, nor suffering from damp. Those of *Achimenes*, *Richardia Elliottiana* and *Caladium* should be cleansed. The last may remain in their pots in a temperature of 60°.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

PLANTING ROSES.—When the soil is in a good condition take the opportunity to forward the work of planting Roses. For new beds thorough drainage is essential. The ideal soil for these flowers is a rich loam of a greasy nature, and it should be dug 2 feet to 3 feet deep. A heavy clay soil may be improved by incorporating with it burnt earth, wood ash and mortar rubbish. If the soil is of a light texture remove the bottom spit and replace it with good turf—the top spit from heavy pasture land for preference—and well rotted cow manure. The soil of established Rose beds usually becomes sour in time, and after three years the plants are benefited by being lifted and replanted. In this case the beds should be dug deeply, removing a portion of the old soil and replacing it with good, turfy loam. Place well-decayed manure in the bottom, and sprinkle

basic slag or bone meal on the surface. Before replanting shorten the strong roots that are deficient in root-fibres, and also cut back the long growths, for these would be liable to damage by wind and in swaying have a tendency to loosen the plant in the ground. Extra vigorous shoots on established plants should be treated similarly unless it is preferred to secure them to stakes or peg them on the ground. Plant firmly and just deep enough to cover the junction of stock and scion with soil.

BEDDING ROSES.—In selecting varieties of Roses for bedding choose those that are continuous in blooming, resistant of mildew and other diseases, and erect flowering. The following are good sorts for the purpose: (Yellow) *Madame Ravary*, *Harry Kirk*, *Mrs. Aaron Ward* and *Lady Hillingdon*; (pink) *Caroline Testout*, *Madame Jules Grolez*, *Lady Ashtown* and *Madame A. Chatenay*; (coppery) *Louise Catherine Breslau*, *Madame Mélanie Souper*, *Madame Ségond Weber*, *Edu Meyer* and *Betty*; (cream) *Antoine Rivoire*, *Prince de Bulgarie* and *W. R. Smith*; (crimson) *General McArthur*, *Richmond*, *Red Letter Day* and *Ecarlate*; (white) *Frau Karl Druschki* and *Molly Sharman Crawford*. The dwarf *Polyantha* varieties are indispensable for small beds, and useful as edgings generally. *Rödhätte* is a cherry-red variety of this type, and very free-flowering. The blooms are larger than those of most of this section. *Jessie* and *Erna Teschendorf* are two good crimson varieties. Good varieties in shades of rose and pink are: *Orléans*, *Mrs. H. Cuthush*, *Aennchen Müller*, *Ellen Poulsen* and *Phyllis*; (white) *Yvonne Rabier* and *Schneewittchen*; whilst *George Elger* is a good yellow sort.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CHICORY.—This valuable winter salad is one of the easiest plants to cultivate in summer, and may be forced in any dark chamber during the winter. With plenty of roots, a continuous supply may be had with very little trouble. If only a small quantity of Chicory is needed, the roots may be placed in 10-inch pots, eight or ten roots to each pot. The soil should be rich and pressed moderately firm; the crowns must not be covered with it. An inverted pot of the same size is the most convenient covering. If the soil is dry at the time of potting, water thoroughly; but after this very little moisture is necessary, as the young foliage is easily injured by excessive damp. The pots may be placed in heat as necessary, a corner of the Mushroom house, or a dark chamber under the stage of a warm greenhouse, being suitable. Slugs are very fond of the young leaves, and must be kept in check.

ENDIVE.—Lift some of the more forward plants and place them in a cold pit for forcing. Later batches should be protected from frost and heavy rains; box frames may be used, or the crowns may be transplanted in cold pits. Perfect darkness is necessary to blanch and prepare the stems for use; guard against excessive damp.

SPRING CABBAGE.—Plantations of Cabbage should be examined, and blank spaces in the rows made good. Use the hoe freely between the plants to destroy weeds and promote healthy growth. If slugs are troublesome, use lime freely along the rows. Plants still in the seed-bed should be transplanted carefully in nursery beds; they will be of use for making fresh plantations early in spring. Choose a sheltered position, and ground that is not excessively rich. Allow a space of 6 inches each way between the plants. These late seedlings may prove valuable for a succession to those in plantations already made.

SORREL.—In order to maintain an adequate supply of green leaves in winter, lift some of the roots with plenty of soil and place them in a slightly heated pit.

CHIVES AND TARRAGON.—Roots should be planted on a gentle hot-bed to promote a quick growth. Admit an abundance of air after the shoots are a few inches high.

MUSTARD AND CRESS.—Make frequent small sowings of these salads in boxes and place the boxes in a warm greenhouse or pit.

EDITORIAL NOTICE.

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, NOVEMBER 23—

Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Leaf Vegetables and How to Cook Them," by Mr. C. Herman Senn).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 41.4.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, November 18 (10 a.m.): Bar. 30.2. Temp. 34°. Weather—Foggy.

SALES FOR THE ENSUING WEEK

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—

Dutch Bulbs, by Protheroe & Morris, 67 and 68, Cheapside, at 10.30.

MONDAY AND WEDNESDAY—

Rose Trees, Shrubs, Perennials, and Bulbs, at Stevens' Sale Rooms, 38, King Street, Covent Garden, at 2.30.

WEDNESDAY—

Trade sale, Bulbs, &c., at 1. Hardy Plants, Fruit Trees, Roses, &c., at 1.30. Japanese Lilioms at 3, by Protheroe & Morris.

Annual sale of Fruit Trees at Platt's Nursery, Borough Green, near Wrotham, Kent, by order of Mr. J. Todman, by Protheroe & Morris, at 12.

THURSDAY—

Roses, by Protheroe & Morris, 67 and 68, Cheapside, at 1.

FRIDAY—

Roses, Fruit Trees and Shrubs, by Protheroe & Morris, at 3.

Recent Discoveries in Plant Disease.

ONE of the most valuable contributions to plant pathology which have been published recently is Dr. O. Appel's paper on the "Relations Between Scientific Botany and Plant Pathology" (*Annals of the Missouri Botanic Garden*, vol. 2, February-April, 1915), and we wish that it could be published in extenso for the benefit of gardeners in this country.

The main purpose of Dr. Appel's article is to show that the study of disease in plants cannot be undertaken profitably by specialists unless these specialists are able to bend all the resources of scientific botany to their service.

In defence of this position, with which we heartily agree, Dr. Appel gives a series of examples of advances in our knowledge of plant disease which have been made by this blending of science and practice.

Thus, in the case of the loose-smuts of cereals, the stages which have led to the control of some of them are:—

(1) Knowledge of the life-history of the smuts; (2) the discovery that different species attack different cereals; (3) the proof that infection takes place through the flowers, and hence that the mycelium is in the tissues of the seed; (4) the experimental proof that it is possible, by keeping the grain for four hours in water at 25° to 30° C., to cause the mycelium to grow without injury to the grain. When forced into growth the mycelium is more susceptible to high temperature than it is in its resting stage, and hence is killed.

Another interesting example of what may be called the deliberate scientific quest of the cause of disease in contradistinction with the mere discovery and naming of the fungous parasite is instanced by the work of Münch on fungous disease of trees. It is well known that certain parasitic fungi are more active in some districts and in some years than in others. But the reason had hitherto escaped discovery. Münch has now shown that the determining factor is in many cases the amount of air in the tissues. Most fungi which cause decay of wood require large supplies of air. Now the amount of air contained in the tissues is dependent on the amount of water these tissues are holding. He has shown, for example, that specimens with narrower annual rings are less attacked than those in which the annual rings are broader; for in the former there is less room for air. In specimens which have suffered from fungus attack the disease is to be discovered first in the broader rings. One and the same variety has a different air-content in different localities. Where water supply is plentiful the tissues are richer in water and poorer in air than is the case in dry districts, and hence the variety suffers in the latter and escapes in the former localities.

A case in point is canker of fruit trees. It is known that a rich supply of nitrogenous manures predisposes a tree to this disease. The reason appears to be that a plentiful supply of nitrogenous food leads to the formation of loose tissue, and this loose tissue is in periods of drought well supplied with air, and so in a state to facilitate the development of the fungus of canker. The fact that this fungus (*Nectria ditissima*) does its damage during autumn and spring is similarly explained; for during this resting period the air-content of the tissues of a tree is high (19 to 20%); whereas during the growing period it falls to about half (11%). The observation so frequently made and referred to again by E. M. on p. 319 of the present issue, that canker is frequent on trees of certain varieties of Apple, the roots of which are in wet or water-logged soil, might seem at first sight to be in opposition to this view. Closer consideration shows, however, that it is not. For a wet soil is a cold soil, and the absorption of water is checked by low temperature. Hence a tree growing on such a soil may fail to absorb as much water as is taken up by the roots of another tree of the same variety growing in a drier soil: a curious paradox which gardeners will do well to bear in mind.

It must not be concluded, however, that this direct relation between air-content of tissues and susceptibility to fungus attack holds good for all cases, even of tree disease. It certainly does not. On the other hand, it is very probable that this relation does hold good in the case of certain diseases of herbaceous plants; as, for example, wilt diseases and the rhizoctina disease of Potatoes.

Lastly, Dr. Appel draws attention to the assistance that those interested in plant disease may receive from a knowledge of

plant anatomy. Thus, leaf-roll of Potatoes may be diagnosed immediately by the state of the bast (phloem) of the leaf. For of all diseases of the Potato leaf-roll alone brings about in its earliest stages a destruction of the sieve tubes. Of the three internal diseases of the Potato, leaf-roll, wilt, and bacterial ring disease, the first is a disease of the bast; the second of the secondary wood vessels; and the third of the spiral vessels.

Plant pathologists are too prone to fix all their attention on the fungous parasite to the exclusion of a study of the host. Dr. Appel's brilliant article should serve to guide them in better and more fertile way—namely, the investigation of the conditions around and within the host which depress the balance in favour of the parasite.

PROF. LEFROY'S NEW APPOINTMENT.

Professor LEFROY, who has served during the past year as Entomologist to the Royal Horticultural Society, has accepted an urgent invitation from the Secretary of State for India to proceed to the East in order to carry out investigations of great economic importance. Inasmuch as the investigation is likely to last until the beginning of 1917, Professor LEFROY, on accepting the appointment, placed his resignation before the Council of the Royal Horticultural Society. At the meeting held on Tuesday, the 9th inst., the Council passed the following resolution:—"The Council, whilst congratulating Professor LEFROY on his appointment to conduct an enquiry on behalf of the Government of India, regrets that the appointment entails so long an absence from England. Inasmuch as the Council must retain freedom of action with respect to the conduct, during the coming year, of entomological investigation at Wisley, it is obliged, though with much regret, to accept Professor LEFROY's resignation. In doing so the Council desires to record its appreciation of Professor LEFROY's services to the Society, and to express the hope that the relations between the Society and the Imperial College may be maintained. The Council trusts, moreover, that it may be possible on his return to make some arrangement for association between Professor LEFROY and the Society."

MR. MARTIN SUTTON.—We learn with pleasure that Mr. MARTIN H. P. SUTTON has been appointed a magistrate of the Borough of Reading. Mr. MARTIN SUTTON is the eldest son of the late Mr. MARTIN JOHN SUTTON and eldest grandson of the late MARTIN HOPE SUTTON. Beside taking an active part in the business of Messrs. SUTTON AND SONS, Mr. MARTIN SUTTON has, as our readers are aware, found time to carry out valuable experiments in relation to the effects of radio-active substances on plant-growth. He combines in a happy degree business ability with scientific interests, and his new appointment is a pleasing indication that his personal qualities and active interest in the civic affairs of Reading are appreciated by the authorities of that town.

THE SURVEYORS' INSTITUTION.—A meeting of the Surveyors' Institution will be held in the Lecture Hall of the Institution on Monday, the 22nd inst., when a paper will be read by Mr. E. M. KONSTAM (Barrister-at-Law), on "Case Law under the Finance Acts." The chair will be taken at eight o'clock.

"COUNTRYSIDE" LEAFLET.—The magazine *Countryside* has been forced to suspend publication owing to the war, but a penny leaflet is being circulated among the readers until the older publication can be resumed. The leaflet contains twenty-four pages of articles and news.

WAR NEWS.—Private SAMUEL HASTIE, of the 9th Black Watch, has been killed in action. Prior to the war he was a member of the garden staff at Norwood, Alloa.

—Corporal A. THOMSON, 7th K.O.S.B., has been killed in action in France. He joined the Army on the outbreak of the war, and was at that time one of the staff under Mr. JOHN JEFFREY at Castlemilk Gardens, Lockerbie. Before going to Castlemilk he was employed in Auchencheyne Gardens, Moniaive. He was the son of Mr. A. THOMSON, gardener, Rossall College, Fleetwood.

—We regret to learn from Mr. J. T. RUSHTON, Baron's Down Gardens, Dulverton, Somersetshire, that his son, Private TOM RUSHTON, 6th Batt. The Queen's, Royal West Surrey Regiment, was killed in action in France on the 13th ult. Previous to the outbreak of the war the late Private RUSHTON, who was only twenty-two years of age, was a member of the gardening staff at Gatton Park, Surrey.

THE VALUE OF TIMBER.—As showing the increased value of timber, Sir JOHN DEWAR, in presenting prizes to Perthshire children for essays on "Four Perthshire Trees," stated that the increase in the value of timber during the past year-and-a-half was at least 50 per cent. His forester showed him a wood which he was having thinned. The timber before the war was practically valueless, but he now expected it to realise £800, after the payment of all expenses.

TRADE WITH CANADA.—The Board of Trade informs us that a Toronto firm wishes to secure the agencies of United Kingdom manufacturers of garden appliances, such as drills, cultivators, planters, seeders, root cutters, and compressed air and other sprayers. United Kingdom manufacturers of the goods mentioned should apply to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, London, E.C., for the names and address of the inquirer.

HUMOGEN.—Dr. DULHAM draws our attention to the fact that the ratio of non-Peat : Peat in the experiment with Potatoes, cited in last week's issue, should be :—100 : 154, and not 100 : 54, as it appears on p. 298, the soil treated with peat thus giving a yield considerably higher than that from untreated soil.

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

PYRUS YUNNANENSIS, tab. 8629.—This species of *Pyrus* was introduced from China by Messrs. JAMES VEITCH AND SONS, who received seeds from Mr. E. H. WILSON. A fruiting specimen was exhibited at the R.H.S. meeting on October 8, 1912, under the name *P. Veitchiana*, and received the Award of Merit. *P. Yunnanensis* was originally discovered by the Abbé DELAVAY in mountainous woods in Yunnan, and was named by FRANCHET. The tree is very ornamental when in fruit, and promises to provide a decorative subject for the shrubbery and pleasure ground.

GENTIANA GRACILIPES, tab. 8630.—This attractive, bluish-purple flowered Gentian has a relatively tall scape and very long pedicels. The flowers arise solitary in the upper leaves, the specimen illustrated having five blooms. The plant was raised by Mr. ELWES in his garden at Colesborne from seed sent from Kansu, China. It is perfectly hardy.

PROMENAEA MICROPTERA, tab. 8631.—This Orchid was first described by Prof. REICHENBACH in *Gard. Chron.*, July 30, 1881, p. 134, and although the plant has been in cultivation for so many years its habitat remains a mystery. The flowers are pale green, the lip having transverse bars of purple.

STREPTOCARPUS DENTICULATUS, tab. 8632.—This new species of *Streptocarpus* has a large, many-flowered inflorescence of rose-purple blooms. The plate gives promise of a good sub-

ject for the plant house. The species is a native of the neighbourhood of Barberton, Transvaal, whence seeds were sent by Mr. J. N. THORNCROFT to Mr. W. E. LEDGER, Wimbledon. Seedlings were subsequently raised in the Botanic Garden, Cambridge, and Mr. LYNCH has successfully crossed it with *S. cyaneus* and other species.

CLEMATIS UNCINATA, FORMA *RETUSA*, tab. 8633.—The plant under notice differs from the typical *C. uncinata* by its leafy inflorescence, and its leaflets being all retuse. The inflorescence of small, white, fragrant flowers is very graceful. The plant needs a warm, sunny situation.

yellow and of medium size. At Kew the plant has been grown in a tropical house and thrives in the conditions that suit *Stanhopea*.

ANEMONE OBTUSILOBA, FORMA *PATULA*, tab. 8636.—*A. obtusiloba* is very variable; the form *patula* has elongated flowering shoots, but there is some speculation as to whether this character is natural or due to cultivation. The flowers are purplish-blue, about 1½ inch across. The plant grows wild on Mount Victoria, Western Burma, at 12,500 elevation, and gives some promise of being able to survive our winters.

POTENTILLA DAVURICA VAR. *VEITCHII*, tab. 8637.—This plant is described as the most at-



[Photograph by Reginald Farrer.]

FIG. 114.—*PRIMULA URTICIFOLIA* GROWING WILD IN CHINA.

(See p. 320.)

The November issue contains the following :—

RHODODENDRON CARNEUM, tab. 8634.—This is a dwarf species from Northern Burma, but the flowers are large, the tube being 1½ inch across the mouth. The petals are flesh-coloured, the blooms very attractive. The plant has flowered in the conservatory at Kew under similar treatment as that given to *R. formosum* and *R. Veitchii*, to which it is nearest allied.

SIEVEKINGIA SHEPHERDII, tab. 8635.—This new Orchid is a native of the Colombian district of Rio Condoto Choco, and was collected by Dr. SHEPHERD in 1912. The flowers are

attractive and, from the cultural standpoint, one of the most distinct of the shrubby *Potentillas* added to collections in recent years. It was found wild in China by Mr. E. H. WILSON, and flowered for the first time in this country in Messrs. JAMES VEITCH AND SONS' nursery at Coombe Wood. The plant is remarkably floriferous, and produces its sprays of snow-white flowers well above the grey-green foliage.

PUBLICATIONS RECEIVED.—*Bee-Keeping Simplified*. By W. Herrod-Hempsall, F.E.S. For the Cottager and Smallholder. (London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd., 31 and 32, Paternoster Row.) Price 6d. net.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LIV).

LES LÉGUMES AUX HALLES DE PARIS.

A DIVERSES reprises nous avons parlé des propositions faites à Paris en vue d'y maintenir les légumes à des cours normaux. Dans un article récent publié par l'*Echo de Paris*, M. Paul Delay défend le point de vue des consommateurs qui protestent contre le renchérissement, injustifié à leurs yeux.

Le carreau des légumes est constitué par les principales voies publiques qui avoisinent les Halles centrales. Jusqu'à une heure de la matinée variant selon les saisons, les maraîchers peuvent occuper trottoirs et chaussées, et y exposer leurs légumes et leurs fruits.

Or, depuis plusieurs semaines, les denrées ainsi offertes ont augmenté de prix de façon plus que sensible. Pourtant, si la culture maraîchère des environs de Paris a été amoindrie pendant la guerre, elle reste suffisante pour assurer, à côté des envois des expéditeurs de province, l'alimentation de la capitale.

Les deux principales raisons de cette hausse, sont les suivantes :

(1) Régulièrement, les maraîchers seuls ou leurs employés ont le droit de vendre sur le carreau. En fait, des industriels ont pris l'habitude d'acheter au maraîcher, soit en cours de route — ce trafic se pratique notamment aux alentours de l'Etoile — soit à l'arrivée aux Halles, la totalité de son chargement. Le maraîcher adopte cette combinaison, qui assure la vente de sa marchandise et lui permet de rentrer tout de suite chez lui, et il accepte volontiers de faire passer — en terme de métier — le "regrettier" pour son employé.

Naturellement le regrettier, entendant réaliser un sérieux bénéfice, s'efforce de maintenir les cours à des prix élevés.

La police a déjà poursuivi la chasse aux regrettiers, elle en a pincé certains, mais bien d'autres se dissimulent en passant pour les employés des maraîchers.

Y a-t-il un remède ? Il suffirait d'obliger chaque maraîcher qui ne vend pas lui-même, de donner la veille le nom de la personne qui le remplacera. Ainsi la vente du regrettier serait rendue impossible, celui-ci ne pouvant accepter d'acheter ferme vingt-quatre heures à l'avance une marchandise dont il ignore la quantité et l'état.

(2) D'autre part, la hausse sur le carreau est très favorisée par les centaines de soldats qui viennent chaque jour s'y approvisionner pour le compte des unités résidant dans le camp retranché de Paris. La plupart ne savent ni acheter ni résister aux offres qui leur sont faites. Conclusion : les prix acceptés par les acheteurs militaires doivent être supportés, bon gré mal gré, par les acheteurs civils.

Depuis le 27 septembre, une organisation nouvelle a été créée pour approvisionner de légumes verts tout le front au moyen d'achats globaux faits par des professionnels, directement aux producteurs de province dans deux centres : Lyon et Paris.

Or le prix de revient de ces légumes prouverait que les cours parisiens sont exagérés, et qu'un bénéfice notable serait prélevé par les intermédiaires. M. Delay s'est enquis des prix payés pour les fournitures aux armées et dresse le tableau suivant.

	Zone des armées	Camp retranché
	fr.	fr.
Poireaux	18	35
Choux	17	30
Carottes	18	22
Oignons	37	40
Navets	8	15

Le remède au renchérissement excessif serait donc de charger les professionnels qui fournissent toutes les troupes du front, d'approvisionner aussi les 100,000 hommes du camp retranché de Paris.

Ainsi le carreau serait débarrassé de ces acheteurs, haussiers par ignorance ou insouciance, et ne se trouverait plus qu'en face de la population civile, qui a l'habitude de mieux défendre son argent.

La préfecture de police a décidé de fixer un cours officiel pour les denrées alimentaires. En ce qui concerne les légumes, les prix ne pourront dépasser cette semaine :

Carottes Croissy-Montesson, 0 fr. 45 à 0 fr. 50 la botte; diverses, 0 fr. 40; au poids, 0 fr. 30 le kilo; Choux et Choux frisés gros, 0 fr. 40 à 0 fr. 60 pièce; moyens, 0 fr. 20 à 0 fr. 40 pièce; Navet Croissy-Montesson, 0 fr. 25 à 0 fr. 30 la botte; divers, 0 fr. 15 à 0 fr. 20; au poids, 0 fr. 20 à 0 fr. 30 le kilo; Poireaux Croissy-Montesson, 0 fr. 70 à 0 fr. 90 la botte; divers, 0 fr. 50 à 0 fr. 70; Pommes de terre Hollande, 0 fr. 25 à 0 fr. 30 le kilo; saucisse rouge, 0 fr. 25; ronde, 0 fr. 20; chair blanche, 0 fr. 20; Pommes, choix, 0 fr. 20 à 0 fr. 30 le $\frac{1}{2}$ kilo; autre qualité, 0 fr. 10 à 0 fr. 15.

Chaque semaine une commission, composée de fonctionnaires et de commerçants, établira les cours qui seront publiés au *Bulletin Municipal* et affichés sur les murs des mairies et des écoles. Chaque commerçant de détail devra afficher le cours avec, en regard, les prix auxquels il offre les produits.

NOUVELLES DIVERSES.

AIDE AUX HORTICULTEURS FRANÇAIS. — L'*Horticulture française* publie des listes d'offres faites par des horticulteurs en faveur de ceux de leurs compatriotes dont l'établissement a été détruit ou endommagé au cours de l'invasion. Ces offres concernent surtout des graines et des plantes qui seront requis pour la remise en exploitation des cultures.

LES VENDANGES. — La cueillette des Raisins s'est accomplie cette année par un temps magnifique, exceptionnellement chaud. Les fruits étaient très beaux et donneront une qualité de vin supérieure, comparable à celle des meilleures années.

A Pommard, on a traité le Raisin de 60 à 100 fr. les 100 kilos. Les Raisins blancs ont atteint un prix plus élevé. A Beaune, 65 à 100 frs. suivant la qualité; à Savigny, où la récolte était assez abondante, 65 frs.; à Aloxe-Corton, les premières cuvées ont été vendues de 80 à 100 frs. Une partie de la récolte du clos Vougeot a été vendue 200 frs. Les pinots de vigneron se vendent de 85 à 100 frs. A Chambolle et à Morey, on traite couramment à 80 et à 100 frs.; les propriétaires font leur vin au Syndicat, qui paye 100 frs. les bonnes cuvées. A Vosne-Romanée, 100 à 125 frs.; à Gévrey-Gambertin, 65 frs. les pinots, et 30 frs. les gamais. Les gamais de la côte dijonnaise se vendent couramment de 25 à 30 frs. les 100 kilos.

LES FRUITS DANS LE LIMBOURG. — On annonce que la récolte des fruits dans la Hesbaye limbourgeoise a été très belle. Une sucursale de l'Obstzentrale a été établie à St. Trond pour les envois en Allemagne. Les Pommes sont payées aux cultivateurs aux prix suivants : Keuleman, 10 fr.; Court pendu, 25 fr.; Belle fleur, 25 fr. les 100 kilos. On raconte que des marchands rachètent à l'Obstzentrale et exportent pour leur compte en Allemagne. L'"organisation" du commerce qui devait supprimer

l'intermédiaire n'aurait donc abouti qu'à la création d'un intermédiaire nouveau.

Au Limbourg hollandais la récolte est également magnifique; de certaines gares les envois vers l'Allemagne sont doubles de ceux des années précédentes.

LA MAIN-D'OEUVRE AGRICOLE EN FRANCE. — Une entente est intervenue entre le Général Gallieni et M. Méline, Ministre de l'Agriculture. Au système des permissions individuelles est substitué le droit pour tous les agriculteurs disponibles d'obtenir des permissions de quinze jours en deux séries. Toutes les fois que la chose sera possible, les permissionnaires seront envoyés sur leur terre.

LA CONTREBANDE. — À Zevenaar (Hollande) un wagon de Pommes destiné à l'Allemagne parut suspect aux douaniers. Un examen minutieux fit découvrir une série de tonnelets remplis de matières grasses cachés sous les Pommes.

LES BULBES HOLLANDAIS. — Une émotion assez vive a été causée dans les milieux horticoles néerlandais à la suite des procédés auxquels des marchands ont eu recours pour obtenir des commandes en Angleterre. On estime que certaines annonces sont de nature à nuire à la réputation des producteurs de bulbes, car elles constituent de véritables appels à la charité anglaise. Les producteurs sérieux protestent contre semblable manière d'agir et craignent qu'elle ne donne lieu à une recrudescence de la campagne contre l'emploi de produits horticoles hollandais, le public anglais pouvant être si facilement amené à croire que le trafic avec la Hollande profite indirectement à l'Allemagne.

M. CHASSET. — Le secrétaire de la Société Pomologique de France a récemment donné de ses nouvelles. Il a été au front depuis la déclaration de la guerre. Nous apprenons avec plaisir qu'il se porte à merveille. Pendant ses heures de loisir il a terminé un travail qui sera bientôt livré à la publication.

LE COMTE DE HEMPTINNE. — Des nouvelles contradictoires continuent à circuler sur le sort de la famille de Hemptinne. Des renseignements reçus au Havre permettaient d'espérer qu'aucun des comtes de Hemptinne n'avait été fusillé, la peine de mort prononcée contre le comte Joseph ayant été commuée en emprisonnement. Dans d'autres milieux on se base sur des renseignements ultérieurs pour confirmer l'exécution de l'un des frères.

KORT OVERZICHT VOOR DE VLAMINGEN.

Men begint meer en meer te klagen dat de groenten te Parijs overdreven duur zijn. Sommigen schrijven dien toestand toe aan het optreden van tusschenhandelaars die den boerkoozen, bij hunne aankomst in de stad, de groenten afkopen en hogere eischen stellen aan de verbruikers.

Ook wordt beweerd dat het marktgaan van soldaten de prijzen doet stijgen daar ze geene ondervinding van den handel hebben en niet hun eigen geld in 't spel zien.

De fruitopbrengst was dit jaar in Limburg overvloedig. De Duitschers betalen de Keulemans 10 fr., de tafellappelen 25 fr. per honderd kilos.

Daar het Duitsch bestuur in België bestatigd heeft dat de aldaar voortgebrachte hoeveelheden Druiven en Witloof onmogelijk konden verbruikt worden, is opnieuw toegelaten die waren uit te voeren.

HOME CORRESPONDENCE.

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

YEW POISONING (see pp. 263, 297, 313).—Though I agree generally with what Mr. Clinton Baker regards as the effects of Yew on cattle, yet our knowledge of this subject is still incomplete, as shown by the report of Dr. Munro, which was published in *The Journal of the Royal Agricultural Society*, 1892, p. 698, and summarised in *The Trees of Great Britain and Ireland*, Vol. I., p. 118, where I quoted him as follows:—"Taxine is probably the poison of the Yew, but it is doubtful whether it has ever been obtained in a pure state, and its physiological effects have not been sufficiently studied. Other alkaloids are probably present in Yew. Taxine is present in fresh Yew leaves, as well as in those withered or air-dried. It is also present in the seeds, but not in the fleshy part of the fruit. The Yew poison may be one of moderate virulence only, and may occur in greater percentage in male than in female trees, or the percentage may vary from tree to tree without distinction of sex, and this may explain the capricious occurrence of poisoning. Also the half-dried leaves would be *cateris paribus*—more potent than the fresh. Further and extended chemical researches in conjunction with physiological experiments are necessary to clear up the matter." I agree with Mr. Smith that there are many "varieties," which I presume he meant when he wrote "kinds," and that we have still something to learn about them; as indeed we have about all kinds of trees. The seven geographical forms which we treated as varieties in our book, but which Mr. Clinton Baker calls distinct species, five of which I have seen in their native countries, are, so far as I can judge, not so distinct from each other as are several of the varieties of the common Yew which have been raised by nurserymen or have been found in cultivation, and our knowledge of the possible limits of variation of the common Yew might justify a supposition that the other so-called species may not be constant if raised from seed, which I consider one of the best tests of the limits of variation. I have brought home live wild specimens of the common Yew from the South of France, Portugal, Croatia and the Himalayas and planted them in my own grounds, so that some day they may afford material for the further investigation of this subject. If anyone can procure me a plant from the Caucasus, where the Yew is abundant and attains a great size, as it also does in the Himalayas, I should be very grateful. *H. T. Elwes.*

CHINESE CYPRIPEDIUMS.—In your issue of July 3 (p. 11) there appeared a letter from me in reference to Mr. Reginald Farrer's account of the *Cypripediums* he found in China, published on May 15 (p. 258). I have recently received the following letter from Mr. Farrer with the romantic address of "The Valley of Rocks and Wolves, Thibet":—"September 1.—I have just seen with great pleasure your note on my remarks about Chinese *Cypripediums*. But I think you will find it is you, not I, who have erred in regard to *hirsutum*. I worked up *Cypripedium* very carefully for the *English Rock Garden*, and by the latest and most comprehensive North American flora (for the life of me I cannot now remember its name—Britton and Brown?) it quite clearly appeared that *C. hirsutum* is the oldest and only valid name of *C. spectabile* (also synonymised by *C. Reginae*). *C. parviflora*, if I remember aright, is the correct name of *C. pubescens*, also including a spurious *C. hirsutum*. And either you misread my note or the *Chronicle* misprinted it, for it was *fasciculatum*, not *fasciculatum*, which I attributed to the group of *C. macranthum*. The humble little cousin is perfectly different from *C. debile*, and the last species from *C. arietinum*—is, indeed, nearer to *C. calceolos*, so far as I remember the order of my article." He adds: "Alas! this season has shown me no *Cypripedium* of any shape or kind." Mr. Farrer was quite correct in his surmise that the paper had misprinted my *fasciculatum* for *fasciculatum*. I noted it at the time and ought to have written pointing it

out. Of the two nameless kinds I only suggested that they might be *debile* and *arietinum*, knowing that they had been found in those regions, for the descriptions, though so charming, are lacking in botanical detail. I am delighted that Mr. Farrer should have two new *Cypripediums* to his credit, for I prophesied it in your issue of December 12, 1914. *Hirsutum* seems a vexed question. I have not Britton and Brown, but only G. G. Nile's *Bog-Trotting for Orchids*, in which there is a detailed appendix taken from it. According to this *Reginae* is the correct name of what we know in England as *spectabile*, whereas *hirsutum* is the name of the yellow *pubescens*. *W. Herbert Cox.*

[We have submitted your letter to Mr. R. A. Rolfe, who replies as follows: "Both Britton and Brown and Nile make *C. pubescens* a synonym of *C. hirsutum*, Miller, and in my opinion, correctly. Miller states: 'The flower is of a reddish-brown colour, marked with a few purple veins.' This certainly does not describe the white and rose *C. spectabile*. As regards the proper name of that, there are two older—*C. Reginae*, Walt. (1788) and *C. album*, Ait (1789). *C. parviflorum* is not the correct name of *C. pubescens*, but the latter was erroneously figured in *Bot. Mag.*, tab. 911, as *C. parviflorum*, which may be what Mr. Farrer is thinking of. *C. fasciculatum*, Franch., not the North American *C. fasciculatum*, Kell., was, of course, what Mr. Farrer intended." *Eds.*]

CUPRESSUS LAWSONIANA.—In my account of the Lawson Cypress (p. 272) I omitted to mention a group of the trees at Westonbirt, Gloucester. The trees when I measured them in 1903 were about 70 feet high by 6 feet in girth, while another tree on the same estate I estimated to be 66 feet by 6 feet 8 inches in girth. These are two of the tallest specimens of Lawson's Cypress on record. *A. Bruce Jackson.*

TRANSPIRATION AND RESPIRATION (see pp. 292, 312).—I am afraid some of your readers may easily form wrong ideas on the relation of transpiration and respiration to light and heat from the compressed statement made by Prof. Henslow in your issue of November 13. It is certainly not accurate to describe light as the cause of transpiration. Many plants transpire in the dark, and, as a matter of fact, a number actually lose water faster when grown in dense shade conditions than when exposed to more intense light. The rate of transpiration is affected by a considerable number of circumstances, and it is by no means to be regarded as in any way primarily related to illumination. A higher temperature, other things being equal, tends to increase the rate, at least up to a certain point, but the regulative mechanism which controls the loss of water in green plants is sensitive to various conditions, and I am sure no plant physiologist would agree that red and violet rays always give a maximal transpiration. Such a statement betrays a lack of appreciation of the other much more influential factors in the physical environment, to say nothing of the specific reaction of the transpiratory mechanism itself, which is far too complex in its adjustment and reaction for its mode of working to be described in any brief formula such as that employed by Mr. Henslow. Of course, the influence of light of different wave-lengths (*i.e.*, light of different colours) on rate of transpiration has been known for a long time, but nobody supposes, I take it, that light is the cause of transpiration itself, although it may, along with other external conditions, affect it in various ways. Again, it cannot be admitted that heat is legitimately to be regarded as the cause of respiration. That temperature within a certain range is a condition which permits the chemical processes that we lump together as respiratory to go on, of course, nobody will dispute. Like many other chemical processes, there exists a certain relation between temperature and respiratory activity, but the real cause of respiration is to be sought elsewhere. Furthermore, it is not correct to say that the character of the respiration curve obtained by studying the relation between the magnitude of respiration at successively higher temperatures affords the slightest ground for supposing that "the loss of CO₂ must ultimately cause death." What it does teach is

that at the higher temperatures other factors come into operation which diminish the respiratory output of carbon dioxide, and commonly bring about the death of the plant. Apart from the operation of these factors one would expect the same temperature-law that obtains in other chemical processes to hold good for respiration also—as, indeed, it pretty certainly does. But this in no way indicates heat as the cause of respiration. At the end of Mr. Henslow's letter the statement is made that the yellow and blue rays act most powerfully in the process of assimilation. This is a generalised statement based on a special case, and is really misleading as it stands. A certain amount of carbon assimilation (photosynthesis) occurs in all the visible parts of the spectrum, but it is primarily most marked in the red or red-orange in the case of green plants. Here again, however, we have to do with complexities of energy relations which may easily mask the primary reactions, and lead the unwary investigator to erroneous conclusions. The actually observed magnitude of photosynthetic activity will depend on a number of factors, which will collectively determine for a given case in what part of the spectrum the maximum result is obtained. Any alteration in the composition of the factors will, of course, be reflected in corresponding changes in the net outcome of their operation, and it is only complete knowledge of the essential conditions that will enable one to predict in which part of the spectrum, or with what kind of coloured light, carbon assimilation will rise to its maximum in any given experiment. The matter is, of course, far too complex to be adequately discussed here, and my only object in writing this note is to warn the reader who may be comparatively unfamiliar with the more recent work in the field of plant physiology to accept general statements on the complex functions of plants with the greatest caution. Professor Henslow is doubtless fully aware of all this, and I feel sure that he will not suppose I am attempting to charge him with ignorance. Probably he would be amongst the first to recognise the truth—so inevitable in this connection—conveyed in Horace's line: "*Brevis esse laboro, obscurus fio.*" *J. B. F.*

THE VILLAGE FLOWER SHOW.—I write to advocate the extension of the practice of holding flower, fruit and vegetable shows, especially in villages or in parishes where scattered cottages exist. There are two methods, and of the working of both I have had a large experience. Either gives splendid results. One is the old-fashioned exhibition of competitive material. It is not at all expensive to work, provided there are no paid officials. Over a long series of years I find that an average of £12 annually has been sufficient to provide for a liberal amount of vegetables, with a few prizes for cut flowers and window plants and also baking competitions for women. This amount has been eked out by prizes in kind amounting to another £2 or so, and to show that money has very little to do with the success of an exhibition of this kind, we have had on occasion as many as seventeen collections of vegetables, with corresponding figures in single classes. This system fails seriously to influence any but those whose inclination tends to gardening. The other method by means of which the produce of the soil is increased by outside influence is by offering prizes for gardens. This may either be of little or much value. If the system is worked by asking for entries, then it is of very little use. I have travelled over miles of country to find here one garden entered and there another, with the result that the best was nothing to boast of, while over the whole the effect for good was infinitesimal. The other system is to inspect every garden in the village or parish or district, when the great majority are drawn into the net and very great good follows. We have here tried combining the exhibition of garden produce and giving prizes for the gardens; but to combine the two was simply a waste of money, and as a rule one of these methods will be found sufficient to awaken and maintain interest. In the same way, at the expenditure of a small annual sum, about sixty or seventy flower gardens have been greatly im-

proved, an inspection being made of all and the gardens subdivided into classes, so that all should be fairly treated. At our vegetable exhibition the chief prizes have more than once been obtained by lads who had been allowed by their fathers to work their gardens, and as showing how permanent the influence is when started in youth, one of our old prize-takers who left the locality for a situation in London, on his marriage rented a house with a large garden, which he works himself before and after office hours, and not only supplies his family with produce, but makes it pay financially. The daughter of another prize-winner married a Londoner, who knew absolutely nothing of gardening, and she induced him to take an old-fashioned cottage outside the suburban area which had the redeeming feature of a large, but neglected, garden. The glory of that garden has repeatedly reached her native place, and her husband is only less enthusiastic than herself. I could give you many facts illustrating the benefits of these systems, but none perhaps so striking as these. B.

were lost before he could send them. This was the only fruit of the kind on the plant. Four-valved fruits had been described in the case of *Capsella Bursa-pastoris*, *Cheiranthus*, *Brassica* and *Isatis*, and a higher number of valves has sometimes been found; in some cases plants possessing them have been found to breed true to the high number of valves.

Black spot in Roses.—Dr. Horne drew attention to the origin and spread of an outbreak of black spot in Roses in a garden which he had had under observation. The first Roses were planted in 1911, and included H.P., H.T., and Tea Roses, as well as a few climbers. Additional Roses, including Juliet and several standard Roses, were added in 1912; in 1913 *Noëlla Nabonnand*, *Madame Léon Pain*, *Una*, and *Lyon* were added. No trace of black spot (due to the attack of *Actinonema Rosae*) appeared until 1914, when the two dwarf *Lyon* Roses were affected, and soon lost all their leaves. Towards the end of the season a few of the lower leaves of *Noëlla Nabonnand* were also spotted. In 1915 not only was *Lyon* completely defoliated, but *Madame Léon Pain*, *Madame Abel Chatenay*

NATIONAL CHRYSANTHEMUM.

NOVEMBER 11 AND 12.—The autumn show of the National Chrysanthemum Society, which was held in the Royal Horticultural Hall, Westminster, on these dates, was a great success. The competition in most of the principal classes was exceedingly good. The competitive class for a "Floral Display of Chrysanthemums" was omitted from the schedule this year, but was not greatly missed, seeing that trade growers had very imposing groups of first-rate blooms. The quality throughout the show generally was very high. E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. Thomas Stevenson) was a successful exhibitor in the more important classes.

Twenty-six novelties were submitted to the Floral Committee, and of these eight received Awards.

AWARDS.

FIRST-CLASS CERTIFICATES.

Arthur Searle.—The award to this single-flowered variety of Merstham Jewel type was made for its uncommon and highly attractive crimson-carmine colouring; in habit it is rather loose. Shown by Mr. G. MILEHAM.

Ceres (see fig. 116).—A canary-yellow, Anemone-centred single. The ray florets or "guard petals" were of the best Mensa type and size, but the Anemone-like centre florets, which are of a slightly darker shade, are rather too congested to be really beautiful. It is, however, of great value as being the forerunner of a distinct type. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Edith Carell (see page 313 *ante*.).

Picotee.—A very attractive single of Mensa size. The white ray florets are margined (hence the name) and lightly streaked with rosy-purple. Shown by Mr. PHILIP LADDS.

Yellow Merstham Jewel.—A golden-yellow sport from the well-known Merstham Jewel variety. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

CARDS OF COMMENDATION.

Aphrodite (see fig. 115).—A beautiful Anemone Chrysanthemum of mauve-pink colour. The centre florets are attractively tipped with gold. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Charles Harland.—A very large Incurved Japanese variety. The colour is amaranth, with silver reverse. Shown by Mr. NORMAN DAVIS.

Douglas Wells.—A large yellow Incurved variety, which will be of great decorative value. Shown by Messrs. W. WELLS AND CO.

BLOOMS SHOWN ON BOARDS.

Affiliated Societies Class.—THE FINCHLEY CHRYSANTHEMUM SOCIETY had no rival in this class, which is for twelve vases of the different types, and was awarded the 1st prize. The exhibit made an attractive display. The chief varieties were Wm. Turner, H. E. Converse, F. S. Vallis and Francis Rowe (Japanese), C. H. Curtis (Incurved), Snowflake, Eureka and Mensa (singles), Croesus, Mlle. Elise Dordan and Prince of Wales (Pompons).

Thirty-six Japanese Blooms, Distinct.—Of the many exhibits in this exacting class much the best was shown by E. MOCATTA, Esq., Woburn Park, Addlestone (gr. Mr. T. Stevenson), who was awarded the 1st prize, which included the Holmes Memorial Challenge Cup. This exhibit was of very high quality, and the blooms, which were arranged with great skill for colour effect, were remarkably even. The yellow varieties were the very best and these included Mrs. R. C. Pulling, Bob Pulling, Lady Talbot, Miss A. E. Roope, Mrs. T. Stevenson and Mrs. H. Kemp. Amongst the whites were Queen Mary, Wm. Turner and Mrs. G. Drabble. The principal varieties of crimson and red colouring were Thos. Lunt, Mrs. R. Luxford, Master James, His Majesty and A. F. Tofteld. There were also splendid specimens of Maud Lonsdale and Rosamund. The 2nd prize was won by T. H. MANN, Esq., Trulls Heath, Roehampton (gr. Mr. A. Jewell), whose blooms were not so even in quality; nevertheless it was a notable exhibit, in which the splendid blooms of Alice Lemon, H. E. Converse, Miss A. E. Roope, Mrs. T. Stevenson, Mrs. W. T. Smith, Bob Pulling and Queen Mary showed to advantage. 3rd, G. L.



FIG. 115.—CHRYSANTHEMUM APHRODITE; A MAUVE-PINK ANEMONE VARIETY.
(See Awards by the National Chrysanthemum Society.)

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

NOVEMBER 9.—Present: Mr. E. A. Bowles, M.A. (in the chair), Dr. W. Bateson, Dr. A. S. Horne, Messrs. A. Worsley, J. W. Odell, W. C. Worsdell, W. Hales, J. Fraser and F. J. Chittenden (hon sec.).

Fungus on Yew.—Dr. Horne reported that Mr. Ramsbottom had identified the fungus shown by Mr. Bowles from a Yew tree trunk at Myddleton House, Waltham Cross, as *Polyporus lacteus*.

Four-valved Honesty.—Mr. W. C. Worsdell said that he had further examined the curious dissepiment of *Honesty* sent to the last meeting, and had come to the conclusion that the fruit of which it was a part was four-valved. This conclusion was subsequently corroborated by a letter from Mr. Staley, the sender, who said that the fruit had four valves, but some

and *Una*, in the same row with *Lyon*, lost nearly all their leaves, and the spot spread to a number of other Roses. The varieties affected (in addition to those already mentioned) were: Caroline Testout, Mrs. J. Laing, Frau Karl Druschki, Gruss an Teplitz, Hugh Dickson, Madame Ravary, Carmine Pillar, Laurent Carle, Juliet, Mrs. Sharman R. G. Crawford and Kilmarney. It seems evident that the introduction of the black spot was due to the introduction of the *Lyon* Rose, and that it spread from that to other Roses of various types with ease.

Seedlings of Trees.—Mr. J. Fraser said he had recently found seedlings of a variety of trees on the Leatherhead Downs, twenty-seven in all, and that in one gravel-pit he had found three species of *Lemna* (*L. polyrrhiza*, *L. minor* and *L. trisulca*), and the rare *Wolffia arrhiza*, the smallest of flowering plants.

Adventitious Bud on Fern.—Mr. H. B. May sent a piece of the Fern *Microlepia platyphylla* with an adventitious bud.

Wigg, Esq., Rockshaw, Merstham (gr. Mr. M. Sargent), whose outstanding varieties were Mrs. R. C. Pulling, Lady Talbot, Daily Mail and Wm. Turner.

Twenty-four Japanese Blooms, Distinct.—E. MOCATTA, Esq., also excelled in this class with blooms of merit equal to those in the previous contest. His chief varieties were Mrs. H. J. Stratton, Francis Joliffe, Mrs. R. C. Pulling, Master James, W. Mease, W. Rigby, Wm. Turner, Miss A. E. Roope, Queen Mary and Amber Queen; 2nd, T. H. MANN, Esq., whose varieties Mrs. H. J. Jones, Lady Talbot, Thos. Lunt, Mrs. R. C. Pulling and Kara Dow were very good. 3rd, Lord FOLEY, Ruxley Lodge, Claygate (gr. Mr. A. C. Gardiner), who had good blooms of Master James, Thomas Lunt and Queen Mary.

Twelve Japanese Blooms, Distinct.—Of the ten exhibits the best was decidedly that of E. MOCATTA, Esq., who again had superb blooms of such yellow varieties as Mrs. R. C. Pulling, Miss A. E. Roope and Lady Talbot, whilst Queen Mary, Rosamund and Master James were also excellent. The 2nd prize was well won by Lady ESME GORDON, Paxton Park, St. Neots (gr. Mr. G. H. Clack), with good blooms of such varieties as Queen Mary, Master Rex, H. E. Converse and Bob Pulling. 3rd, Capt. WEINER, Ewell Castle, Ewell (gr. Mr. H. Lloyd), whose outstanding varieties were Pockets' Crimson and Queen Mary.

Six Japanese Blooms, Distinct.—No fewer than twelve competed in this class. The 1st prize was won by C. A. CAIN, Esq., The Node, Welwyn (gr. Mr. J. Pateman), who staged F. S. Vallis, His Majesty, Queen Mary and others in the best condition. 2nd, C. W. MANN, Esq., Ravenswood, Bexley (gr. Mr. J. Limon), with blooms of Kara Dow and Mrs. J. Gibson in good form. 3rd, Lady ESME GORDON.

Twenty-four Incurved Blooms, Distinct.—The entries in this class were very good, and there were many especially fine blooms, but generally the flowers were uneven in quality. The 1st prize, which included the Holmes Memorial Cup, was won by W. H. BENNETT, Esq., Abbeyfield, Bickley (gr. Mr. E. Dove), with a good collection, which included superb blooms of Clara Wells, Pantia Ralli, Miss Thelma Hartmann, Lady Isabel and Mrs. Percy Wiseman. Miss LANGWORTHY, Grays House, Holyport (gr. Mr. T. J. Broom), was placed 2nd with a less even collection, but the exhibit included splendid blooms of Emblème Poitevine, G. F. Evans and Mrs. Percy Wiseman. 3rd, Mr. T. B. BEALING, Burgess Street Nurseries, Southampton.

Twelve Incurved Blooms, Distinct.—Lady ESME GORDON won the 1st prize in this class with a praiseworthy collection, which included good blooms of Eva Smith, Emblème Poitevine, Lady Isabel and Mrs. Percy Wiseman. Lord FOLEY was placed 2nd; his best blooms were Ethel Thorpe and H. Hearn. 3rd, Miss Wyburn, Hadley Manor, Barnet (gr. Mr. A. Jones).

Six Incurved Blooms, Distinct.—Lady ESME GORDON also excelled in this class with the most even exhibit of these varieties in the show. Specially good varieties were Pantia Ralli, Clara Wells and Emblème Poitevine. 2nd, W. H. BENNETT, Esq.; 3rd, Miss WYBURN.

NURSEYMEN'S CLASSES.—Messrs. Wells and Co. offered prizes in Classes 9 and 10 for three blooms in three varieties selected from varieties named in the schedule. In Class 9, C. A. CAIN, Esq., won the 1st prize with superb blooms of Daily Mail, Mrs. J. Gibson and Mr. Keith Luxford; 2nd, G. L. Wigg, Esq., with the same varieties. In Class 10, under similar conditions, E. MOCATTA, Esq., won the 1st prize with excellent blooms of W. Rigby, Undaunted and Thos. Beeson, whilst G. L. Wigg, Esq., was again placed 2nd.

Messrs. H. J. Jones, Ltd., offered two prizes for six blooms in six varieties. Mr. E. MOCATTA won the 1st prize with a splendid collection, which included Miss A. E. Roope, Mrs. Howard Kinsey and Mrs. R. C. Pulling; 2nd, Lady ESME GORDON.

BLOOMS SHOWN IN VASES.

The best vase of three white Japanese blooms was shown by C. A. CAIN, Esq., who had splendid

flowers of Wm. Turner; the 2nd prize in this class was won by W. HALLEN, Esq., Broomham House, Bedford (gr. Mr. H. Blakeway), with very fine blooms of Queen Mary. This exhibitor was placed 1st in the class for a vase of three yellow Japanese blooms with magnificent examples of Mrs. R. C. Pulling; 2nd, G. L. Wigg, Esq.

Messrs. CRAGG, HARRISON AND CRAGG, Heston, Middlesex, won 1st prizes for (a) twelve vases of disbudded, (b) twelve vases of spray blooms, and (c) six vases of Anemone varieties. Their disbudded specimens included fine blooms of Ceres (see fig. 116), Yellow Merstham Jewel, Sandown Radiance and Molly Godfrey (singles), Freda Bedford, Crimson King and Yellow Money-maker. In the class for Anemones Messrs. Cragg used only the new Aphrodite (see

were won by C. Fox, Esq., Tunbridge Wells, who showed splendid specimens of Master James, Daily Mail and Mrs. G. Drabble, Mrs. R. C. Pulling and Master James. G. FORES, Esq., Raynes Park (gr. Mr. C. Pullen) was placed 2nd in the class for twelve blooms and E. RICHARDSON, Esq., Hollymead, Tulse Hill (gr. Mr. J. Vanstone), 2nd for six blooms.

G. FORES, Esq., showed the best six Japanese Chrysanthemums, two blooms each of three varieties, showing fine flowers of Mrs. G. Drabble, Lady Talbot and H. E. Converse; 2nd, Mr. C. Fox.

A. F. TOFIELD, Esq., Holmsdale, Chandlerford, excelled in the classes for twelve and six Incurved varieties respectively, outstanding varieties being Clara Wells and Mrs. Hartmann.

The best six vases of singles were staged by



FIG. 116.—CHRYSANTHEMUM CERES; YELLOW, "ANEMONE-CENTRED" SINGLE.
(See Awards by the National Chrysanthemum Society, p. 326.)

fig. 115), which made a pretty exhibit. Miss LANGWORTHY was placed 2nd in this class with such distinct varieties as Marcia Jones and J. Bunyan.

J. W. HUSSEY, Esq., Malford Lodge, Exeter, won the 1st prize for six vases of Pompons in this section, and he also showed the best three vases of the same type in the Amateurs' Section, having well-grown blooms of such sorts as Mrs. Sabey, Mlle. Elise Dordan and Mrs. Westlake.

Mr. F. G. BEALING was the only exhibitor of six vases of large single varieties, and was awarded the 1st prize.

AMATEURS' CLASSES.

The 1st prizes in the classes for twelve and for six Japanese blooms, distinct, shown on boards,

Loo THOMSON, Esq., Ailsa Craig, Formby, and this gentleman also won the 2nd prize in the class for three vases, in which class Mr. G. FORES was placed 1st.

DECORATIVE CLASSES.

There were only four dinner tables decorated with Chrysanthemums and suitable foliage, and three of them were on very conventional lines. Mrs. A. ROBINSON, Norhyrst, Carshalton, showed originality and taste in her arrangement of mixed mauve-coloured varieties with light sprays of autumn foliage, and was awarded the 1st prize. Mr. T. W. STEVENS, Donnington Gardens, Sydenham, was placed 2nd.

Mr. T. STEVENSON, gardener to E. Mocatta, Esq., won 1st prizes for (a) a vase of single Chrysanthemums and (b) three vases of Chry-

santhemums suitable for drawing-room decoration.

Mrs. ROBINSON showed the best basket of Chrysanthemums.

In the Amateurs' Classes Mr. J. VANSTONE, gardener to E. Richardson, Esq., won the 1st prize for a vase of five blooms of any Japanese variety, and Mr. A. TOPFIELD was successful with (a) a large vase of Chrysanthemums and (b) a vase of single Chrysanthemums.

NON-COMPETITIVE EXHIBITS.

Mr. PHILIP LADDS, Swanley Junction, exhibited a good collection of long-stemmed cut blooms. The flowers were arranged by Mr. R. F. Felton, and the exhibit was the most imposing in the hall; it was adjudged the best miscellaneous exhibit, and thus won the Gold Medal offered by Messrs. Clay & Son. Large stands, filled with the best exhibition blooms of such sorts as W. Rigby, Mrs. R. C. Pulling and Queen Mary towered 10 feet high, and were surmounted by the graceful foliage of Cocos plumosa. Besides the many Japanese Chrysanthemums there were beautiful singles, of which Ethel Mortimer, Sandown Radiance and Bronze Beauty are a selection. (Large Gold Medal.)

Messrs. W. WELLS AND CO., LTD., Merstham, displayed a collection which was especially noteworthy for the high quality of the exhibition Japanese blooms, including Edith Cavell, Mrs. R. C. Pulling, General Smith-Dorrien, W. Rigby, Queen Mary and Daily Mail. (Large Gold Medal.)

Mr. NORMAN DAVIS, Framfield, had a smaller but very choice exhibit, which was arranged in an attractive manner; highly-coloured Codiaeums (Crotons) served to brighten the blooms. The predominant exhibition Japanese varieties were Charles Harland, Mrs. H. Tysoe, Mona Davis and Mrs. Williams. Of the singles Bertha Fairs, Democrat, James Beats and Stuart Smith compelled admiration. (Gold Medal.)

Messrs. H. J. JONES, LTD., Lewisham, had a very dainty arrangement of the best Japanese varieties, including superb blooms of Bob Pulling, Mrs. R. C. Pulling, Frank Ladds and Mrs. Edwards. T. Barnes, Jessica and Buttercup, of the singles, were very charming. (Small Gold Medal.)

MESSRS. HOBBS, LTD., Dereham, associated many vases of Roses with masses of Chrysanthemums. (Large Silver Medal.)

Silver Medals were awarded to the Misses PRICE and FYFE, Birchgrove, Sussex; Messrs. W. J. GODFREY and SON, Exmouth; and Mr. A. ROBERTSON, St. John's Wood, for exhibits of Chrysanthemums.

Medals were also awarded to several exhibits that remained from the R.H.S. fortnightly meeting on the 9th inst.

FINCHLEY CHRYSANTHEMUM.

NOVEMBER 3 AND 4.—The thirtieth annual exhibition of this Society was held at King Edward Hall, Finchley. The number of exhibits was in excess of last year, and the standard of quality was well maintained.

OPEN CLASSES.—In the class for twenty Japanese blooms in four vases, Miss WYBURN (gr. Mr. A. Jones) won the Silver Challenge Cup, which now becomes her property. H. F. STALLARD, Esq. (gr. Mr. C. H. Gosling), was placed 2nd. For five white Japanese blooms H. F. STALLARD, Esq., won the 1st prize with well-finished blooms of W. Turner, which were also awarded the National Chrysanthemum Society's Certificate. For five Incurred blooms J. DEEKES, Esq. (gr. Mr. A. Friend), was placed 1st, with the variety Mrs. P. Wiseman. The Challenge Shield for six vases of Single Chrysanthemums was won by H. F. STALLARD, Esq. For three vases of Single Chrysanthemums (disbudded sprays), J. J. WARD, Esq., was placed 1st. The "Fisher". Silver Challenge Cup for two vases of Decorative Chrysanthemums was won by J. J. WARD, Esq., a National Chrysanthemum Society's Certificate being also awarded. The best exhibit of Cullingfordii was shown by H. F. STALLARD, Esq. The "Rocklands" Challenge Cup and Souvenir for artistic table decoration produced three competitors. Mrs. PARK

HIGHATT was placed 1st, winning the Cup outright. H. J. STOW, Esq. (gr. Mr. W. Reid), was awarded the 2nd prize for a pleasing arrangement of Mary Richardson. For the best group of Chrysanthemums, J. J. WARD, Esq., was awarded the 1st prize, C. WIMBUSH, Esq. (gr. Mr. J. W. Gregory), being placed 2nd. Mr. WARD was also first in the class for a specimen plant—the variety H. W. Thorpe, carrying fifty-seven blooms. For six table plants, Miss WYBURN's exhibit of Pandanus, Dracaena and Croton was awarded 1st prize.

FRUIT AND VEGETABLES.—In the classes for three bunches of white Grapes, and for three bunches of black Grapes, H. F. STALLARD, Esq., was awarded 1st prize. Mrs. HARMSWORTH (gr. Mr. J. Foster) secured three 1st prizes and one 2nd for Apples and Pears. For a collection of vegetables, Mr. J. PARKIN was awarded the 1st prize.

AMATEURS' CLASSES.—The 1st prize for an exhibit of Single Chrysanthemums (disbudded) was won by Mr. PARK HIGHATT, Mr. R. MORTON being placed 2nd.

In the Cottagers' Classes, that for a collection of garden produce was keenly contested. Mr. S. BROADBENT excelled with an exhibit of high merit. Garden Peas were shown by several cottagers.

The amount realised by sale of exhibits, together with the surplus on the year's working, will be handed to a local War Relief Fund.

At the close of the show collections of plants, flowers, fruits and vegetables were sent to wounded soldiers in the local hospitals.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 4.—Committee present: Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, A. R. Handley, A. Hammer, J. Lupton, D. McLeod, W. J. Morgan, W. Shackleton, S. Swift, H. Thorp and H. Arthur (secretary).

AWARDS.

Cypripedium Actaeus var. *Arthur Oakshott* (parentage unknown), from Mrs. LE DOUX.

Brassica Cattlea *The Ozar* (C. Fabia × B.-C. Veitchii), from R. ASHWORTH, Esq.

Cypripedium Aurobe, from P. SMITH, Esq.

R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden), was awarded a Large Silver Medal for a group of *Cattlea labiata*, C. Sylvia, C. Fabia, *Odontoglossum crispum* and *Cypripedium*.

Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton), staged a group of *Cattlea labiata*, a Silver Medal being awarded.

O. O. WRIGLEY, Esq., Bury (gr. Mr. E. Rogers), staged a group of *Odontoglossum crispum* and *Epidendrum vitellinum autumnale*, for which latter a Cultural Certificate was awarded.

A First-class Cultural Certificate was awarded to Mr. E. ROGERS, gr. to O. O. Wrigley, Esq., for *Epidendrum vitellinum autumnale*.

THE WEATHER.

WEATHER IN WEST HERTS.

Week ending November 17.
Cold, Wet, and Exceptionally Sunny.—This was a cold week, and more particularly so at night. On the two coldest nights the exposed thermometer registered respectively 14° and 15° of frost. The ground is at the present time 5° colder at 1 foot deep and 3° colder at 2 feet deep than is seasonable. Rain fell on three days, and to the total depth of 1½ inch. Sufficient snow fell on the night of the 15th to cover the ground. This was the first fall of snow of the present autumn. During the week 7½ gallons of rainwater came through both my percolation gauges. The sun shone on an average for 4 hours 7 minutes a day, which is twice as long as the average daily duration for the month. The winds were as a rule rather high during the early part of the week, but since then light airs and calms alone prevailed. In the windiest hour, on the 10th inst., the total velocity amounted to twenty-two miles, direction W. This is the highest wind as yet recorded here this autumn. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by 13 per cent. My Dahlia plants were killed on the night of the 14th inst. by 14° of frost, or nine days later than the average date of their destruction in the previous thirty years, and the same day of the month as last year. E. M.

Obituary.

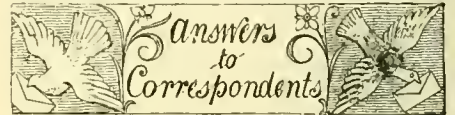
JAMES GRAY.—We regret to announce the death of Mr. James Gray on October 23, in his seventy-fifth year. Mr. Gray was for some thirteen years gardener to Sir George Meyrick, Bart., Bodorgan, Anglesey. He was a skilful gardener, and a successful exhibitor at the York, Liverpool, Chester, and other provincial shows.

GARDENING APPOINTMENTS.

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

Mr. Alfred Reeves, for more than nine years Gardener to C. N. DANIELS, Esq., Chequers Mead, Potters Bar, and previously in the Fruit Department, Warren House, Stanmore, as Gardener to F. P. SCHOLTS, Esq., Sunnyside, West Heath, Hampstead.

Mr. G. Draper, as Gardener to Mr. DERN, Berkhamsted Hill, Great Berkhamsted, Hertfordshire.



*• NEW POSTAL RATES.—Contributors and correspondents are reminded that under the new postal rates, which came into operation on the 1st inst., letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopence, and thereafter at the rate of ½d. every two ounces.

NAMES OF FRUITS: R. C. S. Large Pear, Beurré d'Anjou; small one, Easter Beurré.—Constant Reader. Pine Golden Pippin.—T. Taylor. 1, Beurré Sterckmans; 2, Cox's Pomona; 3, Knight's Monarch; 4, Maltster; 5, Golden Noble.

NAMES OF PLANTS: W. T. S. The specimen was withered; it is apparently *Aster vimineus* (type).—A. M. Swain. 1, *Leycesteria formosa*; 2, *Quercus flex var. latifolia*; 3, *Escallonia macrantha*.—W. H. Stephens. 1, *Agatheae coelestis*; 2, *Anthemis tinctoria* var.; 3, *Campanula punctata*.

PEAS DISEASED: R. The excessive use of nitrogenous manure may have encouraged the attack on the Peas by the fungus *Thielavia basicola*, which is present on the plants, and if the use of such manures is restricted the plants are more likely to be immune. Another way of helping the plants to resist attacks is to sow early, so that they may become well established. Wood-ash will assist the plants to form good, sturdy growth, and this would naturally be an advantage. Over-watering should be avoided. It is, however, impossible to prescribe measures for preventing an outbreak of the disease, as the conditions under which it makes its appearance are not yet fully understood. The only thing which appears certain is that the better the general health of the plants, the less subject they are to disease.

SEEDLING CHRYSANTHEMUM: T. P. The seedling single yellow Chrysanthemum you send is pretty, but it shows no advance on varieties already in cultivation. It is somewhat similar to the old variety Kitty Bourne, which is now discarded by growers for others of greater merit. If, as you state, it resembles Ceddie Mason in the spray form, it might be useful for decorative purposes.

SEEDLING APPLE: J. W. W. The seedling Apple is fairly distinct from other varieties in cultivation, and appears to possess merit, especially as the tree is a free bearer. Send specimens of the fruit to the R.H.S. Fruit and Vegetable Committee on Tuesday next, the 23rd inst.

Communications Received.—E. M. H.—G. H. C.—F. J.—H. J. C.—H. M. V.—A. D. W.—G. B. G. S. of H.—H. W. W.—W. R. D.—R. S. of A.—C. N.—P. E. H.—W. H. W.—W. H. C.—T. D.—E. M.—C. and Co.—A. J. C.—T. W. B.

THE

Gardeners' Chronicle

No. 1509.—SATURDAY, NOVEMBER 27, 1915.

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MECONOPSIS.*

BETWEEN the modest buff covers of the *Kew Bulletin*, No. 4, of the present year is to be found the most important contribution to the literature of the genus *Meconopsis* that has been made public since Fedde published his *Pflanzenreich* in 1909. Students of the genus have had some difficulty in accepting all the conclusions advanced by Fedde, and this, coupled with the increasing interest exhibited in the genus by cultivators and the important additions that have been made to it of recent years, especially from China, render the present revision particularly opportune.

Ever since Hooker in 1851 established *Cathecartia* as a genus distinct from *Meconopsis*, it has been the shuttlecock of botanists who have handled the subject. Hooker knew but one *Cathecartia*—*villosa*—and as the stigmatic character on which he based the genus, i.e., the degree of separation that takes place in the valves of the capsule†, is still distinct, his judgment was sound. Other botanists—to wit, Maximowicz and Franchet, Prantl, Kuntze, Cummins and Prain—have since enlarged *Cathecartia* by the addition of species, and one of the important conclusions now arrived at by the author is that these additions cannot stand, and that plants of the *Cumminsia* section must be reduced to *Meconopsis*, and those of the *Eucathecartia* section as well, excepting only *C. villosa*.

To that extent the ground is cleared.

* "Some Additional Species of *Meconopsis*," *Kew Bulletin*, No. 4, 1915.

† In *Meconopsis* the capsules open by slits at the top, in *Cathecartia* the valves split to the base when opening.

and the addition since 1906 of thirteen new species, though it has rendered necessary a modification of the general description of the characters of the genus *Meconopsis*, does not affect the sub-division proposed by the author in 1906. That sub-division split the genus into two sections—*Eumeconopsis*, in which, if not actually hairless, the plants are furnished with simple hairs or prickles, as in *M. aculeata*, *speciosa*, *Prattii* and others, and *Polychaetia*, of which *integrifolia*, *simplifolia* and *punica* are examples: in this section the plants are hirsute and furnished with barbellate hairs. These two main sections are split up again, the *Eumeconopsis* into seven groups, all the members having a capitate or clavate stigma with decurrent subcontiguous rays, and *Polychaetia* into four groups with varying characters.

It is in attempting to follow the enumeration and synonymy of this sub-grouping that the horticulturist who is not at the same time a practised botanist will almost certainly be gravelled, for in several instances the distinctive differences between one species and another are such as will seem to him of almost a microscopical character: remembering Bentham's definition of a species,‡ he will marvel at the deftness of the botanical hair-splitting which has resulted in the creation of forty-two species of *Meconopsis*, many of them known only as yet in the guise of dried specimens.

Cultivators will look in vain under the name *aculeata* or *sinuata latifolia* for the Poppy that has stood many of them in good stead during the past few years, for it has been given a new title and advanced to the rank of a species as *M. latifolia*. The career of this Poppy is an example of the difficulties botanists have to dispose of in dealing with the genus. Originally it was assigned to *M. aculeata*, and though in 1876 Clarke observed that it differed from that species he acquiesced in its retention as *M. aculeata*. The synonymy was accepted by the pundits and stood till 1906, when seed of "the blue Kashmir Poppy" received at Kew from Col. Appleton was distributed as *M. aculeata*?

Two years later the Poppy in question flowered at Kew and elsewhere, and was figured in the *Gardeners' Chronicle*§ as *M. sinuata*, a species described by Prain in 1896, but only known here through herbarium specimens. Later in the same year the plant was described and figured in the *Bot. Mag.*, tab. 8,223, as *M. sinuata latifolia*, and it has since been in cultivation in various directions, under one or other of the three names that have been bestowed on it.

The history of the nomenclature of this particular Poppy affords a good illustration of the difficulty of scotching a mistake in the name of a plant once it has been formally christened and distributed, and there is more than one garden in

‡ "A species comprises all the individual plants which resemble each other sufficiently to make us conclude that they are all, or may have been all, descended from a common parent. These individuals may often differ from each other in many striking particulars, such as the colour of the flower, size of the leaf, etc., but these particulars are such as experience teaches us are liable to vary in the seedlings raised from one individual."—*Handbook of Brit. Fl.* (1866), p. 26.
§ September 12, 1908, p. 202.

Great Britain where this Poppy has been cultivated under the three names that have been officially bestowed on it at various times.

In point of fact, so far as is known, *M. sinuata* has never been in cultivation, while *aculeata* is rare in gardens, if, indeed, it still exists. *M. latifolia* is easily distinguished from both *M. aculeata* and *sinuata* by the sinuses on the leaf margin, for these are acute in Col. Appleton's plant (*M. latifolia*) and rounded in the other two.

M. decora, a new species, has been founded on a Poppy raised at Greenwich Park from seed collected by Capt. Bailey, and reputed, apparently on grounds that may not perhaps prove altogether sufficient, to have been gathered in the Abor country. It is seemingly identical with a remarkably fine white-flowered Poppy which bloomed during the summer of 1914 in more than one private garden, and was then supposed to be *M. sinuata latifolia alba*, the plants having originated in the Edinburgh Botanic Garden, whence the seed of Mr. Hay's plant was received at Greenwich. These plants had rather more stature than the Poppy then known as *sinuata latifolia*, and differed from it in other directions; in view of these differences and the fact that from the same batch of seed both blue and white flowered plants have been observed, one is led to suppose that *M. decora* may perhaps be of hybrid origin. It is, at any rate, obvious that the specific position assigned to the plant in the *Bulletin* cannot stand, nor the group *Decorae* that has been founded on it.

M. Prattii (Prain), which has still to make its way into general cultivation, is another Poppy about which there has been a good deal of uncertainty, for up to 1906 the plant was regarded as a variety of *M. sinuata*, that position having been assigned to it by Prain ten years earlier, after consideration of the dried specimens then available. In 1906 the arrival of further material led to a revision of the position, and the plant was placed by Prain under *M. rudis*, Fedde at much about the same time having referred it to *M. racemosa*.

Now, however, that there has been an opportunity of observing the plants under cultivation in this country, botanical differences of a minor character have become apparent between the two, as in the texture and colour of the leaf, in the anthers, which are buff in *Prattii* and yellow in *rudis*, as well as in the coloration of the stigma, with the result that Pratt's Poppy is added to the list of species.

M. Wallichii is so widely known and has been so staunch a friend to more than a generation of gardeners that the author may well hesitate before making the change which as a botanist he evidently considers should be made in the nomenclature of this species. In 1906|| the doubts expressed by the author ten years previously¶ as to the identity of *M. Wallichii* had developed into a de-

|| *Jour. As. Soc., Bengal*, LXIV. (1896), p. 318.

¶ *Ann. Bot.*, Vol. XX., p. 369.

finite identification of this Poppy as synonymous with *M. napaulensis* of De Candolle, and in the *Bulletin* the identification is reaffirmed, along with photographs of Wallich's specimen of No. 8,121 and of De Candolle's as well; the latter, it must be confessed, appears to the lay eye a trifle scant as a basis for an important decision.

The matter hinges on the colour of the petals of De Candolle's plant, and the confusion in regard to the nomenclature came about in this way. In 1821** Wallich made a gathering of several species of Poppy on Gossain Than in Nepal, and about three years later De Candolle, of Geneva, received from him a specimen of one of them. On that specimen De Candolle, in 1824, based the species *M. napaulensis*,†† classifying it as *Stylophorum*, and from the strict botanical point of view the other specimens of that particular species should be regarded as co-types of *napaulensis*. In 1830 the E.I. Company made a distribution of Wallich's gathering of this Poppy from their herbarium, labelling it No. 8,121, in ignorance apparently of the fact that De Candolle had founded *M. napaulensis* on the specimen of the same species he received from Wallich six years previously.

In 1855 Hooker and Thomson founded the yellow-flowered species *M. robusta*,‡‡ but did not deal with Wallich's No. 8,121, and in 1872,§§ as an afterthought, according to the author, referred the latter Poppy to that species, unaware that in 1824 De Candolle had created *M. napaulensis* out of the same plant; indeed, De Candolle's creation of *M. napaulensis* seems to have been overlooked till 1895, and the confusion that has resulted has been made worse by Fedde's endorsement in the *Pflanzenreich* of Hooker and Thomson's mistake in referring Wallich's No. 8,121 to *M. robusta*.

The fog in which the matter is enshrouded will not apparently be cleared up till it is known whether De Candolle's specimen was the blue or red-flowered form of what has always been known as *M. Wallichii*, and meanwhile the non-technical reader will probably conclude that it does not greatly matter which form the experts select, as he knows from his own experience that as often as not a sowing of *M. Wallichii* may produce red as well as blue-flowered plants.

Although the author makes it clear that in his opinion *M. Wallichii* should be reduced to *napaulensis*, the change must inevitably cause endless confusion in gardens, and this appears to be a case where the botanists may well be content to place their conclusions as to the synonymy of *M. Wallichii* on record, leaving the horticultural world to follow its own bent in the matter.

The mention of *M. napaulensis* brings us to yet another point in which for more than half a century cultivators have been labouring under a delusion, for the author makes it evident that the fine yellow-flowered Poppy so often met with in gardens as *M. nepalensis* has no right to the name, and should correctly be styled *M. paniculata*. The mistake is due to Joseph Hooker, who in 1855 included in his *Illustrations of Himalayan Plants* a plate of this Poppy as *M. nipalensis*. Hooker followed Walpers, who had published the plant as *M. napaulensis* in 1842, the species having been first described by D. Don in 1825 as *Papaver paniculatum*.

The enumeration of new species includes besides *M. latifolia*, *decora* and *Prattii*, already mentioned, *M. lyrata*, *speciosa*, *Forrestii*, *eximia*, *Baileyi*, *argemonantha*, *concima*, *venusta*, *impedita*, *lepidia* and *psilonomma*, the last-mentioned pair collected by Farrer in Kansu. All these hail from Western China except *Baileyi* and *argemonantha*, which have been found in Tibet and the Eastern Himalaya respectively. *M. Wardii* does not figure in the list, for the author,

Farrer notwithstanding, regards it as synonymous with *M. Prattii*.

The monograph—for such, in short, it is—brings our knowledge of the genus down to the present time. It exhibits to a remarkable degree the erudition and unique knowledge of *Meconopsis* possessed by the author, and if now and again the reader feels that the author has sometimes exhibited a curious reluctance to follow his own reasonings to their logical conclusion, and take a definite decision on a particular point, it may be ascribed to that courteous regard for the opinions of other authorities that is so noticeable a feature of the revision. Obviously written by a botanist for botanists, the monograph is of a highly technical character, and many of the points dealt with are so involved that the cultivator may reasonably hope for some further elucidation.

ORCHID NOTES AND CLEANINGS.

CATTLEYA FENELLA (IRIS × FULVESCENS).

FLOWERS of this new and pretty hybrid are sent by Mr. H. G. Alexander, Orchid-grower to Lieut.-Col. Sir Geo. L. Holford, Westonbirt, Tetbury. *C. fulvescens* (Forbesii × *Dowiana aurea*) influences the size and form of the flower, and *C. Dowiana aurea*, one of its parents, the colour. *C. Iris*, which usually produces a constriction in the middle of the lip, scarcely shows in the cross, although in other examples of the batch it may probably be more in evidence. The sepals and petals are primrose-yellow, the lip rosy-mauve, with orange lines from the base to the centre.

CATTLEYA DRAGON (FABIA × FULVESCENS).

THIS hybrid is also sent by Mr. Alexander. The bloom is formed like that of *C. fulvescens*, but with broader petals. It is an attractive flower, with sulphur-yellow sepals and petals slightly tinged with lilac, the crimped labellum being reddish-mauve, with well-defined gold lines in the basal half.

HYBRID ORCHID COLOUR VARIATION.

IN reply to the request for information in *Gard. Chron.*, September 25, p. 200, on the variation in colour of hybrids, according to which parent was the seed-bearer, Mr. F. C. Puddle, gardener to W. H. St. Quintin, Esq., Scampston Hall, Rillington, York, kindly sends flowers which support in the main the previous records referred to. Mr. F. C. Puddle writes:—"I am sending herewith flowers of some home-raised seedlings, which I think may interest you, as although the seed-parent was in each case a normal mauve variety, yet in these in-

dividual seedlings the cyanic colour is more or less suppressed. In the case of the *Cattleya Fabia alba*, three plants of the batch were white and the rest normally-coloured varieties."

The *Cattleya Fabia* (*labiata* × *Dowiana aurea*) variety is a very fine flower, with white sepals and petals, the lip in form and colour being near to that of a good type of *C. labiata*, reddish-purple in front, with a narrow fringed white margin. Mr. Puddle also sends *Brasso-Laelia Moonbeam* (*B.-L. Jessopii* × *L. Dayana*), with the remark that so far no seedling in the batch has shown any colour in the petals or sepals, although in most cases there is a slight suffusion of mauve in the labellum. The seed-bearer was the rose-and-purple *Laelia Dayana*, which has also pronounced characters in the ridges on the lip. The colour has vanished by the introduction of the yellow *Laelia xanthina*, which with *Brassavola Digbyana* produced *Brasso-Laelia Jessopii*. In the white lip, which has a slight rose tint, *L. Dayana* may be traced, but the ridges in the centre only appear in the veining when held up to the light. It is a very pretty and interesting hybrid.

Another, *Cattleya Freya*, had for seed-parent a fine dark *C. Mantinii nobilior* (*Bowringiana* × *Dowiana aurea*). It is the first of the batch to flower, and it would be premature to judge as to what the colour of the others may be, and about which we hope to learn later. The present flowers, however, amply bear out the suggestion that yellow on to rose and purple may eliminate colour. The flowers sent are in form nearest to *C. Mantinii*, but the sepals and petals are sulphur-yellow, lighter than *C. Dowiana*, and without a shade of rose or other colour. The lip is nearest to that of *C. Mantinii*, but lighter than that parent, being rosy-mauve, with thin gold lines from the base to the centre.

Laelio-Cattleya Bola (*C. labiata* × *L.-C. callistoglossa*) is said to be the only one in the batch showing any suppression of colour. In the composition of *L.-C. Bola* yellow does not enter, and the lighter coloured sepals and petals would come from *Laelia purpurata*, one of the parents of *L.-C. callistoglossa*, which, in its combination with *C. Warscewiczii* and in other combinations with it, tended to less intensity and sometimes elimination of the colour of the other parent. The *L.-C. Bola* delicate sent is a fine flower, 7 inches across, the sepals and petals being silver-white with a slight lilac shade. The lip, which is large and openly displayed, is light lilac with a yellow base, and there are purple lines in front. The subject, as so accurately dealt with by Mr. Puddle, is very interesting. Crosses, reverse crosses, and their relation to colour variation if carefully recorded, would throw light on points which hitherto have been obscured for want of accurate information.

HYBRID ORCHIDS.

(Continued from p. 270.)

Hybrid.	Parentage.	Exhibitor.
<i>Brasso-Cattleya Nodina</i>	<i>B. nodosa</i> × <i>C. Enid</i>	J. and A. McBean.
<i>Cattleya Cowaniana alba</i>	<i>Mossiae Wageneri</i> × <i>intertexta Juliettae</i>	J. and A. McBean.
<i>Cattleya Dragon</i>	<i>Fabia</i> × <i>fulvescens</i>	Sir Geo. L. Holford.
<i>Cattleya Fenella</i>	<i>Iris</i> × <i>fulvescens</i>	Sir Geo. L. Holford.
<i>Cattleya Puritana</i>	<i>Warscewiczii</i> Fr. M. Beyrodt × <i>Maggie Raphael alba</i>	J. Gurney Fowler, Esq.
<i>Cypripedium Artus</i>	<i>G. F. Moore</i> × <i>Lecanum Clinkaberryanum</i>	F. J. Hanbury, Esq.
<i>Cypripedium Anrobie</i>	<i>Aureum Oedippe</i> × <i>Niohe</i>	F. Smith, Esq.
<i>Cypripedium Cetewayo</i>	<i>Chilolae</i> × <i>Gowerianum</i>	Sander and Sons.
<i>Cypripedium Ephrates</i>	<i>Hitchinsiae</i> × <i>Milo</i>	Sander and Sons.
<i>Cypripedium Hildalgh</i>	<i>Bingleysae</i> × <i>Cetewayo</i>	Rev. J. Crombieholm.
<i>Cypripedium Louis</i>	<i>Leander</i> × <i>Actaeus</i>	F. J. Hanbury, Esq.
<i>Cypripedium Miss Faith Hanbury</i>	<i>glaucochylum</i> × <i>niveum</i>	F. J. Hanbury, Esq.
<i>Cypripedium Miss A. Audrey Locke</i>	<i>Garret A. Hobart</i> × <i>Troilus Amy Moore</i>	F. J. Hanbury, Esq.
<i>Cypripedium Moonlight</i>	<i>Actaeus Bianca</i> × <i>Moonbeam</i>	Sir Geo. L. Holford.
<i>Cypripedium Oris</i>	<i>nitens</i> × <i>Memoria Jerninghamiae</i>	F. J. Hanbury, Esq.
<i>Cypripedium Sonia</i>	<i>callosum</i> × <i>Hitchinsiae</i>	F. J. Hanbury, Esq.
<i>Cypripedium Strummitza</i>	<i>glaucochylum</i> × <i>Wrigleyi</i>	Monsieur Gnot.
<i>Cypripedium Zonave</i>	<i>Harrisianum</i> × <i>Bingleysae</i>	F. J. Hanbury, Esq.
<i>Laelio-Cattleya Dione</i>	<i>L. purpurata</i> × <i>C. Pittiae</i>	F. J. Hanbury, Esq.
<i>Laelio-Cattleya Rona</i>	<i>L.-C. bletchleyensis</i> × <i>C. Pittiae</i>	F. J. Hanbury, Esq.
<i>Odontoglossum Pembury</i>	<i>gandavense</i> × <i>eximium</i>	J. Gurney Fowler, Esq.
<i>Sopbro-Laelio-Cattleya Diana</i>	<i>S.-L. Gratrixiae</i> × <i>C. Aelandiae</i>	H. S. Goodson, Esq.
<i>Sopbro-Laelio-Cattleya Serbia</i>	<i>S.-L. pumeximia</i> × <i>C. labiata</i>	Pantia Ralli, Esq.

** The date is given as 1821 in the *Bulletin*, and as 1819 in the *Annals of Botany*.

†† *Prodr.*, I., 121.

‡‡ *Fl. Ind.* (1855), 253.

§§ *Fl. of Br. Ind.*, Vol. I., p. 115.

NOTE.—*Laelio-Cattleya Royal Crimson* (*Gard. Chron.*, January 23, 1915), variety of *L.-C. Lamorna* (*C. Hardyana* × *L.-C. Dominiana*), Veitch, R.H.S., November 5, 1912.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LV).

L'EXPORTATION DES FRUITS ET LÉGUMES DE BELGIQUE.

LES Allemands viennent de revenir sur leur décision interdisant l'exportation de Chicorée de Bruxelles. Quelques envois ont pu être faits à la Hollande, le gouvernement provisoire s'étant rendu compte que la production brabançonne était beaucoup trop abondante pour pouvoir être consommée en Allemagne. En attendant, les maraîchers belges ont subi des pertes énormes dues à la création de l'Obstzentrale qui, suivant les déclarations de certains fonctionnaires allemands, ne visait qu'à la protection des producteurs contre les intermédiaires malhonnêtes.

On s'est immédiatement mis à l'œuvre pour assurer les expéditions vers les États-Unis d'Amérique et déjà des demandes de permis ont été adressées au gouvernement anglais. Ainsi que nos lecteurs le savent, on tient à contrôler les envois faits de Belgique vers les pays neutres. Dans le cas actuel, des formalités supplémentaires sont imposées parce que les expéditeurs se trouvent dans la nécessité d'opérer un transbordement en Angleterre.

Malgré les difficultés provenant des entraves portées à la circulation en Belgique, le premier envoi qui doit quitter la Hollande dans quelques jours, ne comportera probablement pas moins de quinze à seize mille kilos de Chicorée Witloof; c'est dire jusqu'à quel point la situation des producteurs est difficile lorsque le débouché américain n'est pas accessible.

On espère aussi que des envois de Chicorée de Bruxelles pourront être dirigés sur l'Angleterre. Il avait été décidé, en égard à l'origine du Witloof qui n'est en aucun cas produit en Allemagne, que les formalités exigées ici des importateurs seraient adoucies. Les envois de fonds seraient autorisés parce qu'ils profiteraient surtout à une catégorie de producteurs très intéressante, assimilable en quelque sorte à la classe ouvrière. Malheureusement, la prohibition des exportations décidée par les Allemands n'avait pas permis de profiter de cet avantage et, au moment précis où cette prohibition est levée, une circulaire du Board of Trade abolit toutes les licences pour l'importation de produits belges en Angleterre. A partir du mois de décembre, il sera de nouveau exigé une autorisation spéciale par envoi et un engagement quant au non-envoi des fonds. Il est vrai que la Commission de la Trésorerie peut accorder des facilités pour le paiement subséquent, mais l'obligation de demander un permis par envoi peut entraîner des inconvénients si la délivrance de ce permis ne se fait pas immédiatement, une marchandise périssable comme le Witloof ne résistant guère à un retard prolongé. Il est à remarquer aussi que les mesures annoncées par la circulaire en question sont générales, s'appliquant à tout le commerce d'importation; peut-être que pour un légume aussi belge que la Chicorée de Bruxelles, des mesures de faveur pourront encore être obtenues.

La menace du prix-maximum que l'Obstzentrale devait appliquer au Raisin belge n'a été exécutée qu'en partie. Le Raisin de choix peut être expédié directement en Allemagne par les marchands notablement connus comme tels avant la guerre. Les autres qualités doivent passer par l'Obstzentrale et cette organisation fixe la quantité qui peut être considérée comme produit de choix. Pendant la semaine prenant fin le 14 novembre, le Gros Colmar valait 0 fr. 80 à 2 fr. le kilo, l'Alicante 0 fr. 70 à 1 fr. 40, le Muscat d'Alexandrie 1 à 3 fr. A ce moment il n'était pas encore permis d'expédier du Raisin vers la Hollande, mais le bruit circule

qu'il y ait des envois pourraient être faits bientôt. Si l'exportation vers l'Amérique peut se faire sans trop de restrictions, les cours se relèveront, car il reste *très peu* du produit de choix requis pour les envois de New York. Quoi qu'il en soit, la situation est moins pénible que l'automne dernier, l'Allemagne absorbant une bonne partie de la production.

Fait curieux, la crise que traverse la viticulture belge a amené les producteurs du Westland hollandais à conserver leur Raisin beaucoup plus tard que de coutume. Pendant le mois de novembre les envois ont été notablement plus élevés que pendant la période correspondante des années antérieures. On en conclut que la culture retardée est bel et bien possible dans les terres basses des environs de Poeldijk. Certains serristes seraient décidés à organiser leur établissement en vue de la production tardive. L'avenir nous apprendra jusqu'à quel point leur entreprise est réalisable, car il y a sans aucun doute des difficultés à surmonter qui ne se présentent pas en Belgique.

Au dernier moment nous apprenons que deux envois de Witloof sont parvenus à Londres. Ils comprennent un total d'environ quatre mille kilos. Le produit est en bonne condition et s'écoule rapidement. Le prix est de 4 à 6 pence la livre pour le commerce de gros.

NOUVELLES DIVERSES.

NOUVELLES DE LA GUERRE.—Le fils de M. A. Bélin, le président du Comité des Orchidées de la Société Nationale d'Horticulture de France, est tombé au champ d'honneur. Il en est de même de M. Jean Nigon, un des cinq fils mobilisés de l'horticulteur d'Antibes.

MM. Jean et Vincent de Vilmorin font partie du corps expéditionnaire de Salonique.

Le lieutenant Rouyer a été promu capitaine et cité à l'ordre du jour de la division. Le fils de M. Graveau, infirmier de la section coloniale, a été cité à l'ordre de son corps d'armée.

Les pertes parmi les anciens élèves de Versailles s'élèvent maintenant à trente-huit tués et quinze disparus.

ÉCOLE NATIONALE D'HORTICULTURE DE VERSAILLES.—Les professeurs mobilisés de l'Ecole ont été remplacés provisoirement et l'établissement fonctionnera cette année avec ses trois promotions. Le concours d'admission a eu lieu les 11 et 12 octobre. Vingt-trois candidats ont été admis. Le nombre total d'élèves est de soixante-dix, dont quatorze en troisième année, trente-trois en seconde et vingt-trois en première.

LES FLEURS DU LITTORAL.—La Compagnie Paris-Lyon-Méditerranée a décidé de rétablir, pendant la saison florale, le train dit des fleurs.

Des démarches sont faites auprès de la Compagnie de l'Ouest-Etat pour qu'elle assure une réexpédition rapide des colis arrivant à Paris à destination de l'Angleterre, en recourant à un autre port que celui de Boulogne qui se trouve trop près de la zone des armées.

LES ROSES À BAGATTELLE.—Le concours de Roses nouvelles à Bagatelle aura lieu, en 1916-1917, aux mêmes conditions que les années précédentes.

Les plantes, au nombre d'au moins cinq par variété, et de préférence en pot, doivent être envoyées à la Roseraie avant le 15 avril et être accompagnées de toutes les indications relatives à leur origine et aux soins spéciaux qu'elles exigent. Les observations du jury se feront pendant la période s'étendant jusqu'au mois d'octobre de la seconde année.

COMMERCE HORTICOLE AVEC LE BRÉSIL.—Le gouvernement brésilien exige que les envois de plantes et de semences soient accompagnés d'un certificat délivré par les experts compétents du pays d'origine et établissant que les produits en question sont indemnes de maladies et de parasites animaux.

Aucun envoi ne sera accepté si l'examen auquel il doit *toujours* être soumis à l'arrivée au Brésil, prouve que les plantes ou semences ne sont pas saines. Elles seront détruites ou réexpédiées, au gré du destinataire.

Les colis doivent porter l'indication des noms et des adresses des expéditeurs et des destinataires, ainsi que de la localité et de l'établissement où les produits ont été cultivés.

EXPOSITION HORTICOLE À LA LOUVIÈRE.—Une exposition de charité a eu lieu récemment à La Louvière. Le succès a été considérable, beaucoup de visiteurs étant attirés par la nouveauté que les recettes étaient consacrées aux prisonniers de guerre belges. Quatre cents colis de victuailles et d'objets utiles ont pu être expédiés aux camps d'internement en Allemagne.

LES FRUITS EN FRANCE.—On continue à s'occuper en France de la question de l'utilisation des fruits à usage industriel, tels que les Pommes et Poires à cidre. En 1913, il y aurait eu une exportation vers l'Allemagne de 17 à 18,000 wagons pour lesquels un autre débouché doit être trouvé. Beaucoup de distilleries étant arrêtées par suite de la réduction de la production de Betteraves à sucre, on a proposé de les utiliser à la fabrication d'alcool de Pomme. A cet effet, on préconise la réquisition de la récolte des fruits de qualité inférieure dont de grandes quantités risquent d'être perdues.

EMPOISONNEMENT PAR DES BULBES.—Le *Tuinbouw* signale un cas curieux d'empoisonnement causé par l'anhydride carbonique dégagé au cours du transport de bulbes hollandais embarqués à bord du steamer *Rijnadam*, de la Holland-Amerika lijn. Lors du déchargement, le 9 septembre à New York, deux débardeurs furent asphyxiés et des matelots envoyés à leur secours sérieusement incommodés. L'enquête établit que si le dégagement de gaz nocifs par les bulbes était un fait connu des marins, il ne s'était pas encore produit d'accident. Le chargement du *Rijnadam* était très considérable et la formation d'anhydride beaucoup plus intense. Le renouvellement défectueux de l'air avait fait le reste.

KORT OVERZICHT VOOR DE VLAMINGEN.

De Duitschers hebben hun besluit ingetrokken waarbij de uitvoer van Witloof uit België verboden werd. Verzendingen naar Holland worden toegelaten en het is verhoopt dat ook naar Amerika zal kunnen gezonden worden. Een eerste vraag van doorvoer aan de Engelsche regeering gericht, is voor ongeveer vijftien duizend kilos Witloof.

Voor invoer in Engeland worden opnieuw bijzondere toelatingen vereischt. Het geld mag ook slechts later, en mits toestemming, den kweker worden. Men denkt echter dat die maatregelen niet lang in voege zullen blijven daar het Witloof een hoofdzakelijk Belgische groente is. Dinsdag kwamen twee verzendingen in goeden staat te Londen aan. De prijs bedraagt 4 tot 6 pence het pond.

De druivenmarkt in Brussel is niet zoo slecht als geveesd werd; de maximum prijzen die aangekondigd waren, worden niet toegepast op de waar van eerste keuze.

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

XXI.—WOLVESDEN.

ALL this country awakes to life very tardily, and probably in the end with abruptness and unanimity. On June 5 the crest of Wolvesden Pass, though bare of snow, held but little promise. Two flowers only bejewelled the soil-pans of the summit. The one was *Primula stenocalyx*; the other a very curious *Ranunculad*, of which I saw abundance last year in the Min San; but neither succeeded in collecting, nor tried very hard to do so. In point of fact, though it has a shrill showiness, I do not much like it. This season, however, I shall make an attempt to obtain it, in the interests of such kind hearts as can do with *Adonis*. For of *Adonis* this cousin has the tainted tone—a huddled close clump of large flowers, hugging the tuft of dark green spatu-

der-blue; while in size and solidity they rather recall those of *carniolica*. It seems a very widely-spread species, and among the various *Primulas* sent last year under the name of *P. cognata*, *P. stenocalyx* will be found lurking. Not only is it of wide distribution, but apparently of the easiest temper. Between 8,000 and 15,000 feet its tidy tufts and sparkling heads of flower may everywhere be seen: it even has a love of dry, crumbly soil on warm sunny banks, which is almost singular in the race. It ought to prove most precious and easy of cultivation; its lavish abundance throughout this range, no less than its universality, foreshadowing a temper strangely vigorous and tolerant. It is itself a very interesting plant. One of its peculiarities is that at flowering-time the pedicels are almost non-existent, so that only the length of tube and calyx saves the head from looking huddled. (In crowded umbels, however, the central flowers thrust themselves up on foot-stalks, and a tendency to do so is sometimes

calyx, Maxim. The two plants are of distinct beauty, and may, I think, be soundly differentiated as *P. stenocalyx genuina* (see fig. 117), and *P. stenocalyx dealbata* (we are too close here to *P. farinosa* [fig. 118] to use its name). The powderless form is the more abundant, and occupies the lower regions; its foliage is conspicuously bellidoid and rather limp; nor does it occur in clumps, though the single crowns are dotted so freely under the moorland banks as to set them shimmering with blue. *P. stenocalyx dealbata* has the advantage of silver meal to enhance the value of its perhaps rather bluer flowers. It often forms clumps with several scapes, and the leaves are typically much stiffer than the Daisy-like ones of the *genuina* form, very broadly mid-ribbed, more obovate-cuneate, and regularly denticulate as the leaves of the other are not. In this district the genuine form fills the whole countryside, and on the moors of the Gan Chang Pass ascends at least as high as that of Wolvesden. But *P. st. dealbata* I have so far only seen on the Wolvesden Pass and the neighbouring summits, with no trace of its rival; though, as you descend the northern wall and sink towards the scrub and coppice of Wolvesden, you find the leaves gradually appearing limper, till suddenly you come upon the territory of *P. st. genuina*, and there is no longer the least trace of powder to be seen. Both forms vary slightly in colour, but albinos are of the utmost rarity. The flowers have the faint sweet scent of their group, though not so strong as the clean deliciousness of *P. farinosa*.

On the northern side the Pass drops very far and very steeply to the valley, with superb views on all sides of the great mountains now so close at hand. As yet there is little to be seen, for the children of the rocks are still asleep. *Meconopsis quintuplinervis* in noble ancient masses offers richer promise of beauty and abundance in these Alps than on any other range where I have yet seen it; and *M. integrifolia* peers in pale magnificence amid the scrub. Here *M. integrifolia* takes a more refined form than elsewhere, producing only two or three flowers to the stem, and so escaping that blowzy look which it develops when overlaid. As for *M. quintuplinervis*, I can clearly see that it is far happier on these cool, moist and moss-clad slopes than on the drier glades and coigns of Thundercrown, which makes me emphasise again my previous advice, that this lovely Poppy will give you special gratitude for very rich soil, abundantly supplied with moisture. Otherwise, the steep descent of Wolvesden Pass gives only hope, from the splendid Alpine valleys that open up from the base of it, to right and left, into the heart of the peaks—a world of huge dish-like laps and saucers, and downs of grass between each ridge, still bare and pale and dead, but suggesting good things to come when late July shall have unlocked the gates of winter. So one continues down in the valley depth, winding this way and that, along a track incredibly bad and boulder-strewn for so important a mule-road between Singing and Pingfan, till at last, about nightfall, one stumbles upon Wolvesden House, tucked almost undiscoversably under a rampart of loess where Southerly Beck comes brawling down beneath a sunny slope all set with glowing *Incarvillea*, to strike into the course of the main stream now fairly on its way towards the Da-Tung river, swift and turbid, some fifteen miles below. *Reginald Farrer.*



FIG. 117.—PRIMULA STENOCLYX: FLOWERS LAVENDER-BLUE.

late leaves. The sepals are flat and roundish, the petals in great number, narrow and pointed, expanding in a shallow saucer round the many-carpelled green central knob, and each with a sudden dying out into transparency of its metallic yellow half-way down that gives the flower the look of having a wide dusky-coloured eye. A good clump is certainly effective in its tones of tarnished gold, and the very picturesque many-rayed saucers of bloom; and that I myself (and Purdom, too) do not find it a lovable plant is no guarantee that our cold temper towards it will be shared by others.

Quite different is the tale I have to tell of *Primula stenocalyx*. To my mind this stands far away at the head of the *farinosa* group, to which it belongs; though one would not readily credit such a fact, seeing the noble size and amplitude of its flowers. In colour they are typically of *marginata*'s lovely laven-

seen in all.) But in seed a marked change takes place, for now the previously invisible pedicels elongate in the most grotesque manner (the central ones always being taller than the rest) until you get a scape with pedicels of extraordinary length, instead of one with apparently no pedicels at all. And there is yet another interesting oddity about the plant. Professor Balfour has told us that *P. leptopoda*, described as *farinosa*, is identical with the *farinosa* *P. stenocalyx*. The identification puzzled me at first; for while typical *P. stenocalyx* is perfectly powderless in all its parts, Wolvesden Pass, on both sides, and for some way down, abounds in a beautiful *Primula*, which appeared absolutely identical with *P. stenocalyx* of the valley, but that its seedling pedicels are much less inclined to lengthen, usually giving a curious tight bunch of capsules, while scapes, pedicels, and the underside of the leaves are all heavily *farinosa*. Now, on further observation, I cannot doubt that the powdered form is *P. leptopoda*, Burr. and Franch.; while the valley form is *P. steno-*

* * * NEW POSTAL RATES.—Contributors and correspondents are reminded that under the new postal rates, which came into operation on the 1st inst., letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopence, and thereafter at the rate of ½d. every two ounces.

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26, October 17 and 31, November 14 and 28, 1914, January 2, February 27, March 20, April 10 and 24, May 1, 15 and 29, June 12 and 19, July 3 and 10, and November 13 and 20, 1915.

NEW OR NOTEWORTHY PLANTS.

IRIS BELOUINI.

THIS new *Pogoniris* has recently been discovered in Morocco on the steep rocky sides of Oned Madhouma, half-way between Fez and Mecknès, by Captain Belouin, of the Foreign Legion of the French Army.

I. Belouini is a large bearded Iris, coming near apparently to *I. cypriana*, *I. Junonia*, *I. Biliotti** and *I. mesopotamica*. Rhizomes were sent to Paris, and a number of them flowered at Longchamps during the past summer. It should be noticed, however, that they were all cultivated in pots, a fact which may have had some influence on their development. It may, for instance, have caused the leaves to wither sooner after the flowers had faded than they would have done if the plants had been growing in the open ground.

The stem is from 3 to 4 feet high, branching

THE ROSARY.

NOTES ON VARIETIES.

LOUISE LILIA.—This variety is a derivative of General McArthur. The flowers have a blackish-violet shade on a deep crimson ground, and are very fragrant.

OPHELIA.—Perhaps no variety of recent years has pleased the Rose-grower more than *Ophelia*. The beautiful trusses of erect buds, produced often in sprays of six and seven, are superb. The form of the elongated bloom is perfect, the petals are beautifully arranged, and the colouring delightful. The bud often opens a rich apricot shade, and this tint pervades the open flower on a beautiful, soft, salmon-flesh ground. At times the variety reminds one of *Prince de Bulgarie*, but the form is more perfect and its fragrance more intense. For bedding it is splendid and as a forcing Rose it possesses no equal. Blooms are sometimes met with in Covent Garden under the name of *Lady Love*.



FIG. 118.—*PRIMULA FARINOSA*: COLOUR OF FLOWERS PALE LILAC.

(See p. 332.)

into several heads, each bearing 1 to 3 flowers, of large size and sweetly scented. All the blooms that appeared this year were violet, though the discoverer states that he has seen some of a mauve colour. The falls extend horizontally, and the spathes remain green even after the flowers have faded.

The leaves are somewhat bluntly rounded and end in a minute point. The authors of the species lay great stress on the fact that the leaves wither away after the flowering season, and also on the obliquely truncated, quadrate style crests.

The discovery of this new species at the western end of the Mediterranean is of considerable interest, for it supplies another possible parent of *I. germanica*, which is almost certainly of hybrid origin but of unknown parentage. *W. R. Dykes*.

* There seems to be some doubt as to the spelling of this name. The Iris was not named after a well-known botanist, Biliotti, but after a certain Biliotti, a consul at Trebizond, who sent the plant to Foster. Botanists, not knowing this, frequently change the spelling to Biliotti.

One can only wish that other varieties of this type may soon be forthcoming. The variety is grown extensively in America, and I have seen it used in this country for forcing in several houses, each holding 3,000 plants. *Experience*.

POTASH SUPPLIES DURING THE WAR.*

It is probable that during the coming season potash salts will only be available in very small quantities, and that many farmers will have to dispense with them altogether. High prices will encourage the production of potash salts from other sources—e.g., kelp, etc.—but it is unlikely that the quantity of potash obtained from such sources will go far towards meeting the demand. For the present, therefore, it will be necessary to make the best possible use of whatever small quantities of potash manures

* Board of Agriculture and Fisheries Special Leaflet No. 42.

may be available, and to apply them only to those soils and crops which are most in need of them.

It is worthy of note that potash salts have only been in general use in this country since about 1890. Before that time, provided the manure heap was properly managed and the liquid manure carefully preserved, farms working on the four-course rotation, and selling only grain and meat, were largely self-supporting as regards potash. The shortage will be felt most in the case of such crops as Mangolds and Potatoes, and the leguminous crops—Clovers, Lucerne, Vetches, Peas and Beans.

PRESERVATION OF POTASH IN FARMYARD MANURE.—During the coming season it will be necessary on many farms to rely almost entirely on farmyard manure for the supply of potash, and it will be more than ever desirable to prevent any waste during storage, especially as regards the liquid portion, which contains the greater part of the potash. Experiments show that only a small proportion of the potash contained in feeding stuffs is retained by the animal. If, therefore, the hay, straw and roots (which relatively contain by far the larger proportion of the potash removed from the soil in the crops) are consumed on the farm, and in addition linseed and other oil cakes are used freely, much of the potash required by the crops will be supplied in the manure. It is important, however, that the recommendations for storing farmyard manure given in Leaflet No. 93 (*Farmyard Manure*) should be carefully observed, since, unless the manure heap is adequately protected from heavy rainfall, much of the potash will be washed out. Any waste of urine can be largely prevented:—(1) By using enough litter to soak it up; (2) by protecting the manure heap against loss; and (3) by adopting suitable means of collecting the drainage from the yards and manure heap. Where the urine can be collected in a tank it can be applied to the land direct, as explained in Leaflet No. 93, or if this is inconvenient or impossible it may be soaked up in some absorbent material such as dried turf or peat moss litter.

POTASH IN CROP RESIDUES.—Further sources of potash present on the farm are the leaves of root crops and crop residuums. Mangold leaves, for example, are comparatively rich in potash, and the leaves of an average crop may contain enough to meet the requirements of any crop. The leaves, therefore, should be spread evenly over the soil and ploughed in; decomposition rapidly begins and the potash is set free. Considerable quantities of potash are also stored up in the roots of crops, especially in the case of Clover leys and grass land, and this should be borne in mind when deciding on the cropping for the coming season.

POTASH FROM SEAWEED, WOOD ASHES, ETC.—Potash may also be obtained by using Seaweed, wood ashes, and the ashes of burnt vegetable material.

Seaweed.—In districts near the coast any deficiency in potash could be largely met by making liberal applications of Seaweed. "Broad weed" could be used fresh, or after rotting in heaps, while "grassy-weed" and "tangle" should be dried and burnt. A ton of fresh weed should yield 20lb. to 30lb. of potash (enough, for example, to manure from a quarter to half an acre of Potatoes), while the ash, if of good quality, may contain up to 16 per cent. of potash, although there are great variations in individual samples.

Wood Ashes, etc.—In inland districts small quantities of potash may be obtained from brushwood, fallen timber and sawdust, and from weeds, Bracken, hedge trimmings, damaged straw, prunings and other waste vegetable material. These materials should be collected and burnt and used in gardens for the crops that most need potash, such as late Potatoes, Parsnips, Carrots and Spring Onions.

The potash content of these ashes will naturally vary considerably, but on an average may be expected to be somewhat as follows:—

	Potash per cent.
Ash of Bracken	2.5
„ hedge trimmings	10
„ waste cavings	10
„ wood waste	5 to 7

It should be remembered that the potash in these ashes is in a very soluble form, and that exposure to rain may wash out a large portion of it. The ashes should be collected and kept quite dry until they are required for use. They can be safely mixed with superphosphate before distribution, and may be applied at the rate of 3 cwt. per acre.

Another source of potash which might be used when available is the flue dust from saw mills, smelting furnaces, etc. Flue dust may sometimes contain up to 10 per cent. of potash.

LIBERATION OF POTASH IN THE SOIL.—Although potassium salts are easily soluble in water they do not readily wash out from the soil. Wherever, therefore, high farming has been practised, and large quantities of potash salts and cake-fed dung have been used, the amount of potash accumulated in the soil will often be greater than that removed by the crop. A portion of this potash may be made available for crops (1) by applying dressings of sodium salts, such as agricultural salt or sulphate of soda, or (2) by applying lime.

In considering the relative merits of salt and lime as liberators of potash it is desirable to remember that each has certain other specific and distinct effects when applied to soils. For example, an application of lime is usually preferable to salt on heavy soils. On the other hand, on light soils, rich in reserves of potash, salt would probably prove more useful than lime. This, however, will depend to some extent on the crop; for example, salt would generally be more suitable for Mangolds, and lime for leguminous crops.

It should be understood that neither lime nor salt actually supplies potash, and that applications are only effective where potash has accumulated in the soil.

Potatoes.—The shortage of potash will probably be felt more severely in the case of Potatoes than of any crop. The light loams, the gravels and sands on which Potato-growing has developed so much in recent years are typically poor in potash. Little can be expected from applications of salt or lime, for except in small quantities these are not to be recommended for this crop. Salt may be applied, but the dressing should not exceed 1 to 1½ cwt. per acre, otherwise both the yield and the quality of the Potatoes may be affected adversely. Growers, therefore, should endeavour to apply potash in one or other of the forms already mentioned.

FRUIT REGISTER.

APPLE GASCOYNE'S SCARLET.

I do not know the origin of this Apple, but I note that a First-class Certificate was given to it by the R.H.S. in 1887, and its merits well deserve the award. For some time I thought it was a shy bearer as a bush, but by severe root-pruning and keeping the centre of the tree open and the spurred branches thin, an annual crop can be obtained. Summer pruning is conducive to the early maturing of a fruit crop, as by this means light and air are admitted to the main branches. As an espalier or cordon in the open, this Apple succeeds admirably, the fruit swelling to a large size, especially if some assistance is given to the trees in the shape of liquid manure, or house sewage. I look upon this as one of the most desirable Apples to plant in any garden large or small. *E. M.*



THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq.,
Castleford, Chepstow, Gloucestershire.

SCHOMBURGKIA.—These Orchids are reputedly shy flowerers, but if grown in a light position they rarely fail to produce a spike. The principal species are *S. crispa*, *S. Humboldtii*, *S. Lyonsii*, *S. rosea*, *S. Sanderiana*, *S. Thomsoniana*, and *S. Tibicinis*. Some of the plants show signs of flowering; others have nearly completed their growth, and when the pseudo-bulbs are matured a batch of roots will appear at their bases. Care must be taken to protect these young roots from injury, either by top-dressing them with soil, or isolating each plant over a pan of water. The former method is recommended unless the roots are near the compost, and it is in good condition. Schomburgkias need very little water when at rest.

PLATYCLINIS.—The individual flowers of this Orchid are neither large nor showy, but they are numerous, and the inflorescence as a whole is very effective. One of the best species is the spring-flowering *P. glumacea*, which has almost completed its growth. The plant should be placed in the intermediate house when the pseudo-bulbs are fully developed, and remain there until growth commences. At that stage a position in the warm house should be chosen and the surroundings kept moist until the flowers commence to expand. *P. filiformis*, another desirable and graceful species, blooms during the summer months, whilst the smaller *P. uncata* flowers in winter. *P. Cobbiana* produces its scapes in late autumn, so that it will be seen that the various *Platyclinis* flower at different seasons. Throughout the growing season the plants should be placed in a warm house, and copiously supplied with water at the roots, but when they are at rest a cool temperature is best, and only a small quantity of water, for the roots need only sufficient moisture to keep the pseudo-bulbs plump. The work of repotting should be done within a short time after the spikes are removed. The compost should consist of a mixture of *Osmunda*-fibre, peat and *Sphagnum*-moss, to which a sprinkling of partly-decayed Oak leaves may be added. The pots or pans should be filled one-third of their depth with drainage material, which should be covered by a thin layer of *Sphagnum*-moss to insure a free passage for water. Although *Platyclinis* enjoy plenty of light, they must be shaded from strong sunlight during their season of active growth and especially when the foliage is young. Until the pseudo-bulbs are matured the immediate surroundings should be moist, and the plants sprayed with clean water—particularly the undersides of the leaves—on all favourable occasions. Spraying is essential because the plants are subject to attacks of red-spider: if this pest appears, sponge the foliage at once.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of
LINLITHGOW, Hopetoun, South Queensferry, N.B.

THE ORCHARD HOUSE.—Place trees of the earlier varieties of Peaches, Nectarines, and Cherries in the orchard house. Later varieties should also have the protection of at least a covered shed against heavy rains and frosts. Other pot fruit trees which have not so far been protected should be removed to a sheltered position, where the pots can be protected with ashes or bracken. Meantime, pruning and the cleansing of the houses should be pushed forward as time permits.

LATE GRAPES.—The greatest precautions must be taken to guard against the damping of the berries, as a single decayed berry in the centre will often spoil the whole bunch. Muscat of Alexandria and most other thin-skinned varieties should now be cut, the stems placed in bottles of water, and stored in the Grape-room, for if the bunches are allowed to hang much

longer they will become a strain on the rods. Bunches of Lady Downes and Gros Colman may be allowed to hang for another month, as these take a long season to develop their best flavour. To guard against damping of the berries of these latest sorts, it is advisable to maintain a gentle warmth in the hot-water pipes, particularly in damp weather, so that moisture condensing on the berries will dry quickly. Admit a little air through the top ventilators whenever the weather is favourable. Generally, ripe Grapes will keep in good condition for a long time in a temperature of from 40° to 45°. Much damage is often done to ripe Grapes by water dripping from faulty squares of the roof-glass. Indeed, an occasional drip in the centre of a bunch will most assuredly set up decay. Most of the leaves are ready to fall, and it will be necessary to collect them from the ground each day, as they would prove a source of trouble by retaining moisture.

STRAWBERRIES.—Plants in pots intended for forcing have ceased to grow, and may be placed in their winter quarters. Cold frames are best, as successive batches can be got at without much trouble. Stacking the pots on their sides is not to be recommended, as the plants are sure to become dry at the roots, which is not conducive to their future well-being. Where Strawberries are required early a small batch should be prepared for forcing, selecting plants with the strongest crowns. Having removed all decayed leaves and rubbish, examine the drainage and top-dress the roots with loam and a good sprinkling of artificial manure. Make up a mild hot-bed of fairly dry leaves and stable litter, and plunge the plants in it up to the pot-rim as soon as signs of growth are apparent. Maintain a night temperature ranging from 50° to 55°; the temperature by day must be regulated by the weather. Air should be admitted whenever the conditions are favourable. Very little water will be required at the roots for some time to come, and it should be about the same temperature as the atmosphere of the house. The plants may remain in the hot-bed until the flower-spikes appear, when they should be placed on a shelf near the roof-glass.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton
Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buck-
inghamshire.

SITUATION OF THE FRUIT GARDEN.—If other circumstances, such as aspect, are favourable, choose a sheltered situation for the fruit garden. It is a good rule to make that there be no forest trees of great height on the south side of the fruit garden for a very considerable distance. Tall trees would throw their lengthened shadows into the garden in the early spring, when every gleam of sunshine is valuable; on the east also there should be nothing that will exclude the sun's rays in the early morning. The advantage of these precautions will be apparent when the trees are in bloom, for frost is very destructive if the blossoms are suddenly exposed to the full rays of the sun when they overtop the trees. On the west, and particularly on the north, deciduous or other trees may be permitted much nearer the fruit quarters, for they will serve as screens from cold winds. It is wise, in all cases, to plant fruit trees a good distance from walls, for not only will the roots grow better further in the border, where the soil is moister, but the branches will not offer such good lurking-places for insect pests. As a rule the immediate confines of a fruit garden should be mostly composed of evergreens, for these will afford additional shelter during the winter and spring. A low situation is not suitable, as the soil is seldom sufficiently dry at the bottom. Moreover, there is usually a natural sourness in soils situated in depressions, which is not easily remedied by draining or other means. On the contrary, the situation should not be excessively high, for then the trees—and standards in particular—would be unduly exposed to winds. The ideal fruit garden should slope gently towards the south and incline slightly towards the east, in order that the trees may receive the benefit of the morning sun. The inclination, however, may be only towards

the south, and that not exceeding one foot in twenty, if artificially made; but if the ground has naturally a greater or less inclination—provided it be not inconveniently steep—there will be little reason for altering it. Ground which has a considerable slope towards the south is always the warmest; a flat, level surface is not so desirable, although if the ground is drained properly the difference in respect of heat will not be very appreciable. Always avoid a north aspect as being too cold and late for the majority of orchard and other fruit trees. Fruit gardens of great fertility and earliness are sometimes met with near the bases of hills when sheltered from the north and east, the situation sometimes being peculiarly adapted for maturing the crops of the more delicate kinds of fruits; such situations are both desirable and advantageous. The nature of the soil is of the utmost importance. Unfortunately, many soils are naturally unsuitable and need constant attention and manuring. Although the quality of the soil may be considered as subordinate to situation, it should not be treated with indifference. Perhaps the best soil for a fruit garden is a rich, mellow loam, not less than three feet in depth, resting on a porous subsoil. Of whatever nature the soil may be, efficient drainage is absolutely necessary, for that is the basis on which all future improvements are effected.

GENERAL REMARKS.—Examine the stakes and ties of young standard orchard trees to make good defects before the advent of rough, wintry weather. Young trees of all descriptions that have borne a heavy crop of fruit during the past season should receive a liberal top-dressing of decayed stable or cow manure. Make every endeavour to complete the work of root-pruning, the renovation of fruit borders, draining, and other ground operations before the advent of wet weather. A supply of leaf-mould, loam, and similar materials should be procured and stacked or stored for future use.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

ASTILBE (SPIRÆA).—The different varieties of Astilbe—known more commonly in gardens as Spiræas—that flower in winter and spring are almost indispensable subjects for decorative purposes. The requisite number of clumps should be potted at once in soil consisting of three parts light loam and one of leaf mould. Stand the plants in a cold pit, whence small batches may be drawn for forcing as desired. These plants enjoy plenty of moisture when growing freely, and require watering once, and sometimes twice, a day. Liquid manure used at short intervals is beneficial; failing this, dress the roots occasionally with concentrated fertiliser.

DICENTRA SPECTABILIS.—This graceful plant with its rose-coloured flowers is a very effective subject for winter decorations under glass. The cut sprays are very ornamental. Prepared plants that were transplanted in the open during the previous spring are best adapted for forcing. If the plants are still in the ground they should be lifted and potted, using ordinary soil and pots no larger than is necessary to accommodate the roots. In potting let the crowns be raised a little above the surface. Settle the soil by watering, and afterwards cover each crown with an inverted flower-pot until they have made 8 or 10 inches of growth. By this means the flower-spikes will grow well above the foliage. Remove the pots by degrees. Feed the roots with liquid manure occasionally. Harden the plants after forcing them in preparation for re-planting in the open.

PLUMBAGO ROSEA.—The plants at this stage should be vigorous and capable of yielding quantities of brilliantly-coloured flowers. The petals develop rather thin in texture and are liable to flag, unless means are taken to counteract these faults. Do not use more fire-heat, from the time the blooms appear, than is necessary for their tree development. Keep the plants near the roof-glass, so that the shoots are only just clear of it. Let the plants have plenty of space, to allow their heads to spread out

thinly; in this way the flowers will be much finer in colour and last longer, either on the plants or as cut blooms.

BOUVARDIA.—Plants required for blooming soon should be grown in sufficient warmth to keep the advancing flowers moving freely. Plants that have filled their pots with roots should be fed with liquid manure or surface-dressed with a concentrated fertiliser. Late plants intended for flowering in the spring are often grown cooler than is good for them, with the result that the flowers are weak and poor generally. In a temperature of 50° the plants will continue to grow slowly and be in a condition to bloom well when a little more fire-heat is used. See that all the plants are kept free from insect pests and especially mealy-bug. To insure healthy cuttings for striking at the beginning of February, let the stock plants be rested suitably in winter.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

ROSE HEDGES.—Certain Roses make admirable hedges or screens. Some of the Wichuraianas can be trained to make impenetrable thickets in a few years. For this purpose the stations cannot be too well prepared, as once planted little assistance can be given the roots beyond top-dressing and feeding them. Dorothy Perkins, Lady Godiva, Garmenia, La Perle, Léontine Gervaise and Edmond Proust are suitable for the purpose. It is best if the plants have not been worked, that is if they are on their own roots, as then there will be no trouble from suckers. The Rugosa Roses and Penzance Briars are also suitable for hedges; the latter when trained over a rustic fence are beautiful objects for a few weeks, and the flowers are followed in autumn by the scarlet hips. Harrisonii, an Austrian Briar variety, with semi-double, golden-yellow flowers, makes a good dwarf hedge, and should be planted in double rows. Zéphirine Drouhin, known as the thornless Rose, has bright, silvery-pink blooms, and makes an effective screen of moderate height. Louis Philippe, a China variety with crimson flowers, is another of this type. The petals are prettily fimbriated. The tree is a vigorous grower with handsome foliage.

CLIMBING AND RAMBLING ROSES.—Roses of the Wichuraiana and multiflora sections may be pruned finally. Those covering arches, pergolas and pillars will be best, if time permits, unfasted before they are attended to and afterwards refastened. The method of pruning should depend on circumstances, the object being to cover the space with well-ripened shoots. If growth is abundant, a few of the older branches should be cut out each year down to the base, also the weaker of the shoots that did not flower this season. Shorten close to the main stem all the lateral flowering growths. In the case of newly-planted trees, the pruning must be in accordance with the condition of the roots, for it would not be wise to leave growths out of proportion to the roots. It is not necessary to sacrifice next year's blooms if the plants are well rooted: in this case only the weaker shoots should be removed. The list of good climbing Roses is a lengthy one, and is continually being added to. A few of the newer Wichuraiana varieties of merit are Sander's White and Lady Blanche (white), Madame A. Nonin and Petit Louis (pink), Sodenia (carmine) and Source d'Or (yellow). Of the multifloras, Dorothy Jeavons, a good white sport of Blush Rambler; Roby, a single coloured carmine Rose on a lemon ground; Sweet Lavender, single, mauve; Butterfly, a large single of pale salmon-pink; Pearl, single, white, with golden stamens; and Hugo Maweroff, small, double carmine flowers, should be included. Do not prune Climbing H.T. and Noisette varieties now beyond removing the useless old shoots. Make the young growths secure from damage by winds. The following new Hybrid Tea Roses promise to become popular as pillar Roses of moderate height:—Cupid, with large single flowers of peach colour; Mrs. Rosalie Wrinch, a large, semi-double pink variety; and Effective, red.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CUCUMBERS.—Winter Cucumbers are growing and fruiting freely, and with a moderate amount of sunshine good results may be expected from well-established plants. In mild weather the night temperature may be allowed to reach 73°. Exercise great care in ventilating, and only ventilate with a view to preventing the temperature from rising too high, and never lower it by the admission of cold air. The work of stopping and regulating the growths must have frequent attention, for it is wrong practice to remove a large quantity of foliage at one time, for this would check root-action, a serious matter in winter. Top-dress the roots frequently with light, rich soil, so that they may continually be in contact with fresh, sweet material. Do not overcrop the plants; remove all but a sufficient number of fruits at various stages to insure an unbroken supply. If Cucumbers are required early next year, sow seeds at once in small, clean pots. The soil may consist of loam and leaf-mould in equal parts, with sufficient sand to render the compost porous. Place the seed-pots on a bottom heat and cover them with sheets of glass as a protection from mice. The soil should be sufficiently moist to render watering unnecessary until the seeds have germinated. Every Day and Dickson's All-the-Year-Round are two good varieties for winter-cropping.

TOMATOES.—Winter-fruited plants require a liberal supply of moisture at the roots. As soon as the fruits are coloured sufficiently they should be gathered and placed in a cool, dry store-room, where they may be kept for several days. Do not allow the growth to become overcrowded, but it is necessary to allow a certain number of young shoots to remain in order to promote root-action. Ventilate freely during mild days, and let the night temperature be between 55° and 60°. Young plants intended for fruiting early next spring should be arranged close to the roof-glass in a house having a temperature of 60°. Ventilate freely in order to keep the plants sturdy.

CAULIFLOWERS.—Plants in cold pits must be ventilated freely both night and day. The lights may be placed in a position to cast off the rain and still allow a free circulation of air, which is necessary in order to keep the plants stocky. Small plants left in the seed-bed may be pricked into a hot-bed, to be potted into 4-inch pots next spring for planting out in April. Slugs may prove troublesome, and should be destroyed by dusting frequently with lime: the careful removal of the plants from one part of the pit to another will often prevent injury from slugs.

CELERY.—The stems should be earthed for the final time when the foliage is dry. Exercise great care to prevent soil reaching the hearts of the plants.

WINTER SPINACH.—This crop is growing freely; the plants should be divested of all overgrown and decaying foliage, and any which show signs of decay should be removed entirely. Hoe the ground when the weather is favourable. The plants will be benefited by a light dusting with soot on one or two occasions during the winter.

SALSIFY AND SCORZONERA.—The roots of these plants should be lifted and stored carefully in sand, either behind a north wall or in a cool shed with plenty of ventilation.

PARSNIPS.—Only a few roots should be lifted at one time, as the flavour of freshly dug Parsnips is much superior to that of stale roots, but if severe frost threatens, a sufficient quantity must be lifted and stored in a cool shed to last for a week or two. The roots will keep well in damp sand.

TRENCHING.—This important work should be done with as little delay as possible when the ground is moderately dry, as soil moved while saturated with rain remains lumpy throughout the season. A good dressing of farmyard manure should be used and the ground broken to the depth of two or three feet. Allow the surface to remain as rough as possible, to expose the clods to the influence of the weather.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.
 Editors and Publisher. — Our Correspondents would oblige by delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR DECEMBER.

THURSDAY, DECEMBER 2—
 Manchester and N. of England Orchid Soc. meet.
 Linnean Soc. meet.
 TUESDAY, DECEMBER 7—
 Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "The Wisley Rock Garden," by Mr. A. Sarsons).
 Scottish Hort. Assoc. meet.
 WEDNESDAY, DECEMBER 8—
 Perpetual-Flowering Carnation Soc. Sh. at Roy. Hort. Soc. Hall. Nat. Chrys. Soc. Floral Com. meet.
 THURSDAY, DECEMBER 9—
 B.G.A. (Watford Branch) meet. Lecture by Mr. C. Fletcher. B.G.A. (Central London Branch) meet.
 MONDAY, DECEMBER 13—
 National Chrys. Soc. Ex. Com. meet. United Hort. Ben. and Prov. Soc. Com. meet.
 THURSDAY, DECEMBER 16—
 Manchester and N. of England Orchid Soc. meet.
 Linnean Soc. meet.
 FRIDAY, DECEMBER 17—
 B.G.A. (South London Branch) meet.
 SATURDAY, DECEMBER 25—
 Christmas Day.
 MONDAY, DECEMBER 27—
 Bank Holiday.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 41.1.

ACTUAL TEMPERATURE:—
 Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, November 25 (10 a.m.): Bar. 30.2. Temp. 39°. Weather—Bright and cold.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY AND FRIDAY—
 Dutch Bulbs, by Protheroe & Morris, 67 and 68, Cheapside, E.C., at 1.
 MONDAY AND WEDNESDAY—
 Rose Trees, Shrubs, Perennials and Bulbs, at Stevens's Rooms, 38, King Street, Covent Garden, at 12.30.
 TUESDAY AND WEDNESDAY—
 Nursery Stock at The Common Nursery, Richmond, Surrey, by Protheroe & Morris, at 12.
 WEDNESDAY—
 Plants, Roses, Fruit Trees, Palms, by Protheroe & Morris, at 1.30.
 THURSDAY—
 Roses, by Protheroe & Morris, 67 and 68, Cheapside, E.C., at 1.
 Nursery Stock at Burnt Ash Hill Nurseries, Lee, by Protheroe & Morris, at 12.
 FRIDAY—
 Herbaceous Plants, Shrubs and Fruit Trees, by Protheroe & Morris, 67 and 68, Cheapside, at 1.30.

As is well known to students of genetics, Dr. Experiments on Germ Plasm. D. T. Macdougall, of the Department of Botanical Research (Carnegie Institution of Washington), has been engaged for some years in investigating the effects of the introduction of chemical substances to the developing ovules of plants. His earlier experiments, made on *Oenothera biennis* and *Raimannia odorata*, led Dr. Macdougall to believe that certain substances thus introduced into the ovaries led to modifications of the embryos matured in the inoculated ovaries. His most recent publication (*Annals of the Missouri Botanic Garden*, Vol. 11, February-April, 1915) does not, however, contain any definite statement concerning these results. Further experiments in this direction, made on *Echinocereus Fendleri*, are not yet sufficiently advanced to allow of a pronouncement.

In the case of an undescribed species of *Scrophularia*, Macdougall believes that he has obtained experimental mutants by means of a solution of potassium iodide, one part in 40,000, injected into the ovary.

Of seeds raised from inoculated plants, one bore albino flowers and another bore flowers with "some marginal colour and a rusty tinge."

In other respects also the seedlings from inoculated ovaries showed departures from the normal.

Seedlings raised from seed of these chemically-produced mutants are stated to have perpetuated the induced peculiarities. It is not definitely stated in the text that the offspring of the albino bore white flowers; but in the case of the mutant with rusty flowers, the claim is made that the offspring bore flowers which corresponded in all essential particulars with those of the previous seasons, except that they were more highly regular.

Our ignorance of the origin of mutations is so profound that we welcome any attempt to throw light on the problem. Nevertheless, we cannot as yet draw any definite conclusion from Dr. Macdougall's results. That in some way or other the mechanism of heredity may be modified by external conditions is not improbable, and it is to be hoped that his further researches may enable Dr. Macdougall to arrive at definite conclusions. In his most recent experiments he has used less drastic reagents—e.g., methylene blue, a substance which is taken up by the living plant, and the passage of which may be traced by its colour effect. He has been able to show that when introduced into the ovary, methylene blue passes into the embryo sac and appears in the egg cell; but whether the introduction of such a substance to the living egg cell will give rise to definite mutations remains to be determined.

Rest for Rubber Trees.

In some countries it is the practice to tap Hevea trees all the year round; but in Ceylon it has been found advantageous to suspend the operation while the trees are "changing foliage." With a view to discovering a basis for consistent practice, Mr. I. E. Campbell, of the Department of Agriculture, Ceylon, has carried out an inquiry into "Seasonal Variations in the Storage of Plant Food in *Hevea brasiliensis* and their Relation to the Resting Period" (Bulletin No. 22). The changes in amount of reserve material (starch, etc.) in the wood of deciduous trees of temperate climates are well known. Throughout the growing period, reserves of food material accumulate in the wood parenchyma, and conversely, in the spring when growth is resumed, the reserves, changed into soluble form, are carried up the tree to the leaves, and serve for the building up of new tissue and the nutrition of the growing parts.

Mr. Campbell has set himself to discover whether this ebb and flow of food material to and from the trunk occurs in

similar fashion in a tropical deciduous tree, such as *Hevea brasiliensis*. This tree loses its leaves in Ceylon in February, and new leaf formation takes place during the latter half of March and the beginning of April. Coincident with the new-leaf formation there is found to be a large reduction of starch in the bark, and also—to a lesser extent—in the wood.

He finds further that the fresh accumulation of reserve starch begins about three weeks after the time when the new leaves are fully formed. In the first rush of growth the reserves are brought into play, and not until the young leaves have had several weeks of activity does the balance between gain and loss of starch turn to the benefit of the former. Mr. Campbell finds, moreover, that the yield from tapping falls very markedly and remains low during the period of defoliation. Thus in February it is 7.64 grams per tree, in March and April about 4, in May 6.69, and in June 7.15.

Wherefore, whatever be the true rôle of latex with respect to the tree, the yield of that substance appears to be controlled by the amount of available reserve material, and it further appears to follow that if the rubber planter wants to make the most out of the goose which lays his golden eggs he should study its idiosyncrasies and let it have a rest from laying during the period when all its energies are required for the formation of its new growth. Planters may, and doubtless will, say that they cannot alter their routine of practice; at all events, it is their business to know that if they continue tapping during the resting period they will certainly weaken their trees. It remains for Mr. Campbell to drive his conclusions home by instituting a comparative experiment in the yield of rubber from rested and unrested trees. Such an experiment should be continued over a period of years, and should include measurements of the growth and vigour of the trees themselves.

THE LATE DR. BASTIAN.—DR. BASTIAN, whose death took place last week, was best known to the scientific world on account of his sturdy championship of the belief that forms of life are constantly arising by obscure though natural processes from non-living material. He refused to subscribe to the commonly accepted view that the microscopic forms which make their appearance in such vast quantities wherever a suitable medium for their growth presents itself are the product of living germs or spores which have gained access to that medium from the air or water; but insisted that they arise *de novo*. BASTIAN was tireless in seeking experimental evidence in favour of his view, but was unsuccessful in convincing the qualified critics to whom he submitted his results. No one can fail to pay a tribute to his persistency in sustaining in the face of that worst of all opposition—uninterested opposition—his belief that here and now Nature is building new forms of life from the raw material of the inorganic world.

NATIONAL CHRYSANTHEMUM SOCIETY'S EXHIBITION, 1916.—The Executive Committee of the National Chrysanthemum Society has decided to hold a show at the Royal Horticultural Hall, Vincent Square, Westminster, on November 9 and 10, 1916.

ROYAL AGRICULTURAL SOCIETY'S EXHIBITION, 1916.—The 77th Annual Exhibition of the Royal Agricultural Society, which will include a flower show, will be held in Alexandra Park, Manchester, from June 27 to July 1. The prizes to be offered will amount to more than £10,000. The annual general meeting of members of the society will be held at the Royal Agricultural Hall, Islington, on Wednesday, December 8.

CROYDON HORTICULTURAL SOCIETY.—The Committee of the Croydon Horticultural Society has forwarded a cheque for £102 4s. to the Mayor of Croydon in aid of the War Relief Funds, being the profits on the recent flower show. At the annual meeting, held on the 16th inst., it was decided to hold a flower show on Wednesday, June 21, 1916, the profits to be given to a war charity, to be agreed upon at a later date.

WAR ITEMS.—The usual annual interchange of situations in Scotland by young gardeners on the 11th inst., the Edinburgh nurserymen forming the medium of intercommunication, was this year marked by a total absence of young men. Such a thing has probably never happened since the institution of this means of obtaining situations. Not only are journeymen and foremen entering the Army, but apprentices are offering themselves as recruits.

—Private D. FERGUSON, 12th Argyll and Sutherland Highlanders, a young Scottish gardener, has been killed in France. He was only twenty years of age, and enlisted rather more than a year ago, being at that time employed in Clovenfords Vineyards. He served his apprenticeship in the gardens at Westerlea, Murrayfield, Edinburgh.

—Private JOHN M'ALLISTER, 9th Black Watch, has been killed in France. He was, before the war, an employee of the forestry department of the Arran estates, at Brodick, Arran.

—The President of the Royal Horticultural Society recently appealed to home-growers of bulbs for consignments of their surplus stock for standing and convalescent camps in France to interest in gardening those men who are able to do a little work. Bulbs to the weight of over one ton have been received and despatched for distribution through the medium of the Red Cross Society. They were contributed by the Edinburgh Botanic Gardens, the Rev. J. JACOB, Messrs. WALTER T. WARE, DICKSON AND ROBINSON, A. M. WILSON, SUTTON AND SONS, CARTER PAGE AND CO., DICKSON, BROWN AND TAIT, ROBERT VEITCH, T. G. BROWN, J. R. PEARSON, W. H. DIVERS, W. POUPART, and BARR AND SONS.

—The Agricultural Relief of Allies Committee, 16, Bedford Square, London, has raised nearly £25,000. Gifts of live stock, implements and seeds to the value of over £5,000 have already been made to French farmers. The Committee appeals for further help to afford assistance on such a scale as the needs of the stricken districts demand.

—Mr. TOM COOK, who has just been gazetted to the Norfolk Regiment, is the eldest son of Mr. T. H. COOK, head gardener to Queen Alexandra, at Sandringham, Norfolk. On the outbreak of war Mr. COOK left the gardens to join the Sandringham Territorials, and his son TOM, at that time fresh from school, joined the garden staff with a view to assisting the foreman in charge in the absence of the head gardener. After six months Mr. COOK was discharged from the Sandringham Territorials, in which he had held the office of Sergeant-Major. He was regarded as the father of the regiment, having raised the company himself in the old Volunteer days. On the return of Mr. COOK to the gardens his son TOM joined the Public School Corps (Royal Fusiliers), and from this regiment he has now obtained his commission. Captain

BECK, the estate agent at Sandringham, is believed to be a prisoner, with many more of the Sandringham men, in the hands of the Turks. Over thirty of the staff of the Sandringham gardens have joined the Army since the beginning of the war.

ITALIAN HORTICULTURE.—We are glad to see that in spite of the war the Italian horticultural *Bullettino della R. Società Toscana* continues to make its appearance and to maintain its interest. The November number contains (among others) an interesting article on "The Magnolia," and notes on a new variety of *Cytisus albus*, Rose Princess Mary and Cattleya Lady Veitch.

TREE SEEDS FOR NEW ZEALAND.—Messrs. F. COOPER, LTD., seed merchants, Wellington, New Zealand, ask for the names of dealers in seeds of *Abies Douglasii*, the Pacific Coast fast growing species only, not the Colorado or Rocky Mountain type; also for seeds of *Pinus*

FRANGIBILITY IN THE EARS OF BARLEY.—The *Zeitschrift für induktive Abstammungs- und Vererbungslehre* (July, 1915), contains an interesting paper by G. VON UBISCH. Certain varieties of Wheats and Oats as well as of Barleys are characterised by fragile articulations, so that the grains break off very easily when the ear ripens. This character is found in reputed wild forms, such as the Palestine Wheat, and has been regarded as an adaptation enabling the seeds to be more widely disseminated. Agriculturally it is a serious drawback owing to the loss of much grain before threshing. VON UBISCH has shown that in Barley the frangibility probably depends upon two Mendelian factors, both of which must be present in order that the character may appear. In various crosses between different true breeding normal varieties, frangible forms appeared in F_1 . An F_2 generation, raised from some of these F_1 forms, consisted in each case of frangible and non-frangible in the ratio 9:7. The experiments had not been carried as far as



FIG. 119. — RHODODENDRON LACTEUM: FLOWERS WHITE WITH PURPLE BLOTCH AND SPOTS AT THE BASE OF THE THROAT.
(See p. 338.)

ponderosa, not the Colorado or Rocky Mountain type.

DAHLIA PLEBISCITE IN AMERICA.—The American journal, *The Florists' Exchange*, has organised a plebiscite among its readers as to the best Dahlias for garden decoration and cut blooms. The results show that the most popular variety is Geisha, which obtained fourteen votes. Kalif had twelve votes; Hortulanus Viet, eleven; Countess of Lonsdale, ten; Souvenir de Gustave Douzon and Wodon, nine each; and Délice, eight.

A WHITE CANNA.—In the Philadelphia journal, the *North American*, of October 18, an account is given of the production of a white Canna, after twenty-one years of effort, by Mr. ANTOINE WINTZER, the well-known nurseryman. Mr. WINTZER is said to have grown 60,000 seedlings in order to obtain the white variety, which he has named Blanche Wintzer. The best previous attempt resulted in Richard Wallace, a form with cream-primrose flowers.

the F_2 generation when the results were published, but there seems little reason for doubting that it will confirm the view put forward by VON UBISCH. Since frangible ears not infrequently make their appearance in cereal crosses, a clear understanding of the nature of the phenomenon must evidently be of considerable value to those engaged in breeding for new and improved varieties.

PUBLICATIONS RECEIVED.—*Summary of Results: Forage Plants*, 1914. By M. O. MALTE, Ph.D. Bulletin No. 81. February, 1915. Dominion of Canada, Department of Agriculture. (Published by direction of the Minister of Agriculture, Ottawa.)—*Summary of Results: Field Husbandry*, 1914. By W. L. GRAHAM, B.S.A. Bulletin No. 83. January, 1915. Dominion of Canada, Department of Agriculture. (Published by direction of the Minister of Agriculture, Ottawa.)—*Symons' Meteorological Magazine*, No. 598, Vol. 50. November, 1915. Edited by H. R. MILL. (London: E. Stanford, Ltd., 12-14, Long Acre.) Price 4d.

RHODODENDRON LACTEUM.

A DESCRIPTION and a coloured plate of *Rhododendron lacteum* appeared in the *Revue Horticole* (1912, p. 376), when it first flowered in Monsieur Ph. L. de Vilmorin's gardens at Verrières le Buisson, France. This occurred in April, 1912, the plant being at that time twenty-two years old.

Since that time flowers have been produced every spring, but never so luxuriantly as this year. The shrub is, to my knowledge, the only one of its age in France, and only two are recorded in England; it may, therefore, be of interest to English amateurs to learn a few particulars of the history and characteristics of the French plant.

Seeds of *Rhododendron lacteum*, Franch., were first received by M. Maurice L. de Vilmorin in 1890 from Abbé Delavay, who had gathered them in Yunnan. Only two seedlings were obtained; one died and the other is the plant illustrated in fig. 120. The two plants now growing in England were sent from the Paris Museum, seeds having been received from the same botanist.

Mr. Godman's plant, figured and described in the *Botanical Magazine* (tab. 8,372), flowered only one year before M. de Vilmorin's, showing clearly the length of time that elapses before this species reaches its flowering size. This is the case with other species, such as *R. grande* and *R. Falconeri* (which it resembles in many other points), and also *R. calophyllum*, of which only young plants are known in gardens.

Rhododendron lacteum has very thick, stiff branches, covered when young with rusty felt. The leaves are about 8 inches long and 2½ inches wide, very thick, dark green above, and covered underneath with the same rusty felt as occurs on the young branches. They last two years, and leave when fallen a persistent scar on the shoots. The flowers number about twenty to each umbel, which is ball-shaped when fully opened, as shown in fig. 119. They are slightly tinged with pink outside in the bud state, then become pure white with a small blotch and spots of bright purple at the base of the throat. The corolla is bell-shaped, about 2½ inches across, and divided into seven shallow, rounded divisions. There are fourteen stamens with glabrous, unequal filaments, and the ovary is very hairy.

The flowering time in France is the second fortnight in April. The Verrières plant is about 5 feet high, and more across. It has never suffered even from severe winter frosts. It is one of the finest plants in M. de Vilmorin's rockery when in flower, and interesting all the year round by reason of its fine foliage. We may add that some successful crosses have been made from it and seedlings are already raised, but it is feared that it will be many years before they flower.

In common with the species named above and other thick, hollow-wooded species, *Rhododendron lacteum* is most difficult to propagate. Grafting has been tried by the most expert French propagators, but unsuccessfully for want of a stock of the same kind of wood. Only a few layers have been successfully struck in the course of two or three years. Seeds, however, have been again collected in China, and I have seen lately, in M. Chenault's nursery at Orleans, young seedlings in large numbers which, if successfully raised, will be introduced to commerce in course of time.

I may add that for five or six years *Rhododendron campylocarpum*, Hook., of Sikkim, which is considered a conservatory plant, has been planted out in M. de Vilmorin's rockery. It has withstood the winter well with a little mulching of dead leaves on the roots, and throws out its beautiful lemon-coloured flowers every year at about the same time as *R. lacteum*. *S. Mettel, Paris.*

AMERICA.

NOTES FROM ARNOLD ARBORETUM.*

ABELIA GRANDIFLORA on Hickory Path, near Centre Street, is still well covered with flowers. The blooms resemble in shape the flowers of some of the Honeysuckles; they are white, faintly tinged with rose colour, and their delicate beauty is set off by the small, dark green and lustrous leaves. *Abelia grandiflora* is a slender shrub with arching stems from 3 to 4 feet high, and is thought to be a hybrid between two Chinese species. Until the introduction by the Arboretum of some of the species of this genus from Western China it was believed to be the hardest of the *Abelias*. In the Arboretum the tree suffers in severe winters, but in sheltered positions it flowers well every year and the flowers continue to open during nearly two months. This *Abelia* has become an exceedingly popular plant in the gardens of the Southern States and is cultivated with more or less success as far north as New York.

NYSSA SYLVATICA.—There is, perhaps, no more beautiful object this week in the

fully moved. It is not, therefore, often found in nurseries and has never received the attention from planters of ornamental trees which it deserves.

HALESIA TETRAPTERA VAR. *MONTICOLA*.—The Silver Bell tree of the Southern States, *Halesia tetraptera*, has long been cultivated in northern gardens. It is usually shrubby in habit, with several stout wide-spreading stems, and here at the north, rarely grows more than 15 or 20 feet high. It is an inhabitant of the Southern States from West Virginia to Southern Illinois, Northern Florida and Eastern Texas. It grows at low altitudes and does not appear to ascend to the slopes of the high Appalachian Mountains, although the *Halesia* of those mountain forests was long considered identical with the lowland tree. The *Halesia* of the high slopes, however, is a tree often 80 or 90 feet high, with a trunk three feet in diameter, sometimes free of branches for a distance of 60 feet from the ground. It is apparently only in recent years that this mountain tree has been introduced into cultivation by the Biltmore Nursery. From Biltmore it was sent to the parks of Rochester,



FIG. 120.—RHODODENDRON LACTEUM IN MONSIEUR PHILIPPE L. DE VILMORIN'S ROCKERY AT VERRIÈRES.

Arboretum than the group of these trees variously known as Sour Gum, Tupelo and Pepperidge. The scarlet and orange colours of the leaves of the Sour Gum in October are probably not surpassed by those of any other American tree and their beauty is increased by the lustre of the leaves, which adds to their autumn brilliancy. The Tupelo is a common and widely distributed tree, occurring from Maine to Florida, Missouri and Texas. At the North, especially near the coast, it is usually found near the borders of swamps and ponds, and is a low, flat-topped, shapely tree with wide-spreading branches; in the interior of the country and especially on the slopes of the high southern Appalachian Mountains it grows sometimes 100 feet high and forms a tall, massive trunk often 5 feet in diameter and a narrow head of erect branches. The flowers are inconspicuous, and the small, dark blue, Plum-like fruit is so hidden by the leaves that it does not make much show. The beauty of this tree is found in its habit and in the thick, dark green, shining leaves. The long, hard roots make the Sour Gum difficult to transplant and only very small plants can be success-

New York, and from Rochester it came to the Arboretum with a description of its peculiar habit, large flowers and fruit. The mountain tree which has lately been distinguished here as var. *monticola* grows as a tree from the time the seed germinates and the seedlings show no variation of habit. Young trees are clean stemmed with short branches which form a narrow pyramidal head. The leaves are of rather different shape from, and less hairy than those of the lowland tree; the flowers are fully a third larger and the fruit is nearly twice as large. Trees less than 10 feet produce flowers and fruit in abundance. There is now every reason to believe that the mountain *Halesia* will prove one of the handsomest flowering trees of large size which it is possible to cultivate in this climate. Its tall trunk and narrow head suggest that it may prove a good street and roadside tree. Two young trees now covered with fruit are growing on the upper side of Hickory Path, near Centre Street; growing with them is a plant of the lowland form, also covered with fruit, so that it is possible to compare these two forms as they appear at this season of the year.

* Bulletin of Popular Information, October 22, 1915.

FLORISTS' FLOWERS.

PERPETUAL-FLOWERING CARNATIONS.

PERPETUAL-FLOWERING Carnations are probably more useful for decorative purposes than any other greenhouse flower. Very little fire-heat is required for their cultivation, and they are economical plants to grow.

The plants are now in full bloom, and will continue to produce flowers throughout the winter, provided that they are grown in a light, airy house. Heating and ventilation require careful regulating during damp, cold weather. It is advisable to admit a little air by the top ventilators when possible, and at the same time sufficient warmth should be maintained to preserve a moderately dry and buoyant atmosphere. A temperature of 50° at night and 56° in the daytime is quite sufficient, and it should be several degrees lower during sharp frosts.

Some growers find rust troublesome. The appearance of this pest can often be traced to a careless use of the watering-can. Carnations should be kept rather dry during the winter, and water only be given when the soil becomes dry; avoid wetting the foliage and spilling water on the floor of the house. Watering should be done in the morning.

Soot-water is valuable if used in moderation. It should be applied for several days in succession, and succeeded by the use of clear water for a week before beginning to use soot-water again. No other form of feeding is necessary until after the turn of the year, when an occasional light sprinkling of Carnation manure may be given. To obtain large blooms of good quality it is essential to pay strict attention to disbudding. Look over the plants twice weekly for the purpose, but do not remove all the lateral buds on a stem at one time. Take care not to injure the stems when removing the buds. Keep the growths in an upright position, either by the use of wire supports or by tying. When looking over the plants to do this, remove any portions of dead or diseased leaves. Green-fly can be kept in check by occasionally fumigating the house. *J. Gardner.*

CULTURAL NOTE.

PRUNING FRUIT TREES.

THE experience of most of us would seem to show that standard and bush Apple, Pear and Plum trees have hitherto been pruned too severely, at the expense of quality and weight of crop and the general condition of the trees. Once the framework of fruitful young trees has been formed, the less pruning they receive, other than the necessary thinning and training of the growths, the better. No general shortening of the young growths, except in the case of extra long shoots, is necessary. Young, well-ripened growths will yield fruit of the finest quality the following and succeeding years, weather conditions being favourable, and the heaviness of the crops will weigh the branches down, thereby tending to the better formation of fruit-buds. Plenty of light thus reaching the branches, fine, clean fruit is developed, and well-ripened wood is produced.

Red and White Currants, on the other hand, require pruning severely, but the young growths of Black Currants and Gooseberries should be only thinned, cutting only sufficient of the previous year's growth to make room for well-ripened shoots of the current year. In the case of the Gooseberry the centre of the bushes should be left fairly open in pruning. Raspberry canes of the previous year's growth should be cut out as soon as the crop has been gathered, and all superfluous shoots of the current year, retaining only sufficient of the stronger and more even shoots for bearing next year. *H. W. Ward.*

HOME CORRESPONDENCE.

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

WOOLLY APHIS ON THE WILD CRAB (see p. 312).—*J. F.* states that American Blight (*Schizoneura lanigera*) is never found on Cotoneaster. It will probably interest *J. F.* to know that I have discovered the pest on Cotoneaster horizontalis, and that it appears to flourish thereon. I enclose a few branches of the Cotoneaster attacked by the pest. *J. Dyfri Jones, Bournville.*

FIG TREE AT PENRHYN CASTLE.—In reply to Mr. Gardiner (p. 278), the Fig tree I described on p. 260 is the one which grew there in his and Mr. Speed's time. When Mr. Speed entered on his duties as gardener at Penrhyn on November 5, 1863, this Fig tree was growing on the same site as at present, but it was overcrowded by Apple and other trees, which he removed. Several other Fig trees which were not so promising were also removed, as Mr. Speed knew that if this particular tree equalled his expectations it would produce sufficient fruit to meet the ordinary requirements of a large establishment. After all these years the result has proved the correctness of his anticipations. *E. Molyneux.*

RAOULIA AUSTRALIS AND BERBERIS VIRESCENS.—Our plant of *Raoulia australis* was subjected to a severe test as to hardiness last week, but although covered with white hoar frost, came through unscathed. The thermometer registered 14° frost 4 feet above ground; probably at ground-level it would have recorded 16°. *Raoulia* is a charming inch-high silvery carpeter, with minute glistening leaves. It grows freely on a flat, well-drained bed of pure mountain-limestone gravel in a fairly-exposed site. *Berberis virescens* is one of the best members of a family rich in autumn tints. For many weeks past the leaves have been passing through brilliant shades of orange, amber and yellow; and now that they are being rapidly shed the rich orange-red bark is strikingly revealed. The colour is chiefly in the strong young shoots, so that older branches should be periodically cut out from the bottom. The shrub is neat and upright in habit. *Harold Evans, Llanishen, Cardiff.*

FORMING NEW PLANTATIONS (see p. 244).—Mr. Webster's remarks on this subject have evoked considerable discussion amongst foresters. He advocates the planting of Larch as the most profitable Conifer: in suitable soils and situations the Larch is certainly one of our most profitable forest trees. The cultivation of Larch *en masse* is rather risky, and Mr. Webster might have given advice on how to choose a suitable soil and situation. It is almost impossible for anyone through the medium of a paper to give accurate advice as to what tree to plant, for this can only be determined on the ground by an experienced person. There has been too much indiscriminate planting; hence many failures, and also the inferior quality of much of our home timber. A farmer or gardener can treat the soil and make it suitable to whatever crop he wishes to grow. It is quite different with the forester or tree-planter. He must take the soil as it exists, and suit the crop to the soil. Local conditions, to a great extent, should determine what species will be most profitable. Thus, in mining districts, when the soil is suitable, it may often be more profitable to grow Douglas Fir, or Sitka Spruce, on a short rotation—say, twenty to thirty years—for timber for mining purposes. These trees grow well in shade, therefore double the number of stems can be grown on the same space as in the case of Larch. Moreover, the rate of growth during this period is much greater than that of Larch; whilst the value of the latter for mining purposes is not double the former, and greater risks attend the production of a crop of Larch. If a chemical analysis of the soil is not made, a knowledge of the surface vegetation will usually offer a good guide as to the nature of the subsoil, and to an experienced person may often serve as a guide as to what species is most likely to succeed. The cost of preparing the soil by trenching makes that method pro-

hibitive; while it does not follow that in such conditions a crop of Larch would remain immune from disease. In this locality (Central Perthshire), which may be looked upon as the home of the Larch in Scotland, broken ground does not encourage the growth of Larch, but considerably encourages the growth and spread of various root fungus—particularly species of *Polyporus*. *A. M.*

—The object of my note (p. 298), was to draw the attention of intending planters without experience to the fact that it is useless to plant Larch in certain sites and situations which have not "special conditions" for the ultimate success of the trees. In all cases that does not mean deeply trenched soil, but soil that is naturally favourable to successful growth. Some few miles from here there are many handsome Larches in woods that were planted without apparently any special preparation. But the soil conditions are naturally favourable, and where this is so I know of no better tree to plant. I wish to warn those with no experience of growing Larch that favourable conditions are not universal, and before planting on a large scale I would suggest that expert evidence should be obtained on the spot as to whether Larch would be likely to succeed. Here some hundreds of thousands of Larches have been planted, the majority in soil as it exists naturally, with the result that save where the soil conditions were favourable, there is not a single tree that will ever grow into valuable timber after over thirty years' trial. But where "special conditions" did exist, there is quite a different tale to tell. The soil here generally is a stiff loam from 1 foot to 2 feet deep, resting on a hard pan-like subsoil, not actually clay but impervious to rapid percolation of water. Hence are produced stagnation about the roots, checking of growth, canker and a covering of lichen on the trunks and branches of the trees. No one would advise the planting of Larch in such unfavourable conditions as these, and it was to save others' disappointment that I wrote my note. *E. Molyneux.*

TRANSPIRATION, ASSIMILATION AND RESPIRATION (see pp. 292, 312, 325).—Not to be too prolix, I would refer *J. B. F.* to my papers as follows: For Transpiration, *Journ. Linn. Soc.*, Vol. XXII., p. 81. For Transpiration and Evaporation, or Transpiration as a Function of Living Protoplasm, *Journ. Linn. Soc.*, XXIV., p. 285. For Assimilation, to *Journ. Brit. Hort. Soc.*, 1893. These will give the grounds for asserting that light is the "cause" of the "results" given above, while respiration is the "result" of heat. Of course, the primary cause is life; for a dead plant can neither respire nor assimilate. *J. B. F.* is right in referring the real cause to life, just as breathing is a function of life; but it would be impossible without external oxygen. Popularly we use the term for everything which produces a result. The sun at one end and a train moving at the other have a series of "causes" and "effects." *J. B. F.* refers to the orange as being more concerned with assimilation; but there is no orange really, since the three primary colours are now recognised as red, green and blue. Orange is only an optical effect caused by the overlapping of red and green rays. Orange = 2 R + 1 G, and yellow = 1 R + 1 G. The chlorophyll absorption bands, A, B, C, D, lie in the red, orange and yellow—i.e., A and B are in the strongest red. These, therefore, presumably are mainly concerned with transpiration, the other two with assimilation. *George Henslow.*

LATE SUMMER-FLOWERING SHRUBS.—In supplement of your correspondents' remarks on pp. 40, 151, and 307, the following notes may be of interest to your readers: Dwarf shrubs, which I have seen in flower since June, include *Andromeda speciosa*, *Cassinia fulvida*, hybrid *Veronicas* *Diamant*, *La Séduisante* and *Autumn Glory*—the last with flowers in November. *Menziesia polifolia*, *M. alba*, and *Microglossa albescent*—the blossoms being white tinged with blue. Good yellow-flowered shrubs are *Potentilla fruticosa*, *Hypericum aureum*, and *H. Androsæum*; *Hedysarum multijugum* and

Ononis fruticosa have pink blossoms. I saw *Aralia sinense* and *A. sinense variegata* with bold, handsome foliage, and creamy-white inflorescences in September. *Spiraea Lindleyana* develops its white flowers in July; the foliage resembles the deeply laciniated leaves of the *Rubus*; these throw up their cream, or crimson plumes in late summer. The old *Whistewood*, *Leycesteria formosa*, has deep crimson flowers surmounted by white bracts. This plant when well grown is not to be despised during August. During the same month *Abelia chinensis*, with its tubular rosy-pink flowers, attracted considerable attention. *Paliurus aculeatus*, growing 15 feet high with flowers and foliage greenish-yellow, has an uncommon effect in September. *Rubus ulmifolius* fl. pl., growing in a bed 12 feet across, and branches 6 feet high, gracefully arching, each growth ending in a double flesh-pink Centaurea-shaped flower, was the most charming shrub I saw last August. *Colutea aborescens* var. *melanocalyx*, yellow, *Ceanothus americanus*, and *Solanum crispum*, are worthy of consideration for their colour effects in the shrubbery in August. *Viburnum rhytidophyllum* has rugose leaves about 6 inches long and coloured light bronze-green; the plant had not commenced to open its flowers at mid-September. *V. Tinus*, and the variegated variety, had flowers expanded in October, and will be more or less interesting until next April. Planted against walls, *Salvia Grahami*, about 9 feet high, gave a vivid sheet of scarlet. *Pentstemon cordifolius*, about 7 feet high, has deep orange-scarlet flowers; and *Bursaria spinosa*, which at a short distance resembles *White Lilac*, brightened the garden during August. The fragrant and generally admired *Choisya ternata* had a second crop of flowers at the end of the same month. Many shrubberies may be made more cheerful and interesting during late summer by interplanting with such climbers as late-flowering *Clematis*, *Jasminum officinale*, and *J. nudiflorum*; the last will carry the succession of blooming right through the winter. J. E.

CLASSIFICATION OF HARDY FRUITS.—My attention has been drawn to the articles appearing in your columns on this subject. Quite recently we, in Staindrop village, have had a course of gardening lectures delivered by Mr. John Smith, the Durham County Council Horticultural lecturer. We included in our local course a lecture on fruits, with demonstration, and an exhibition. That part of the lecture which dealt with classification created great interest. Apples were divided into nine classes, Pears into six classes, and Plums into five classes; and it was demonstrated which classes of fruits were the most suitable and most profitable for this district. It should be possible to classify hardy fruits profitable for cultivation in every county in the British Isles, as it is clear that, however generally popular a variety may be, it is useless to plant it if it does not belong to the class that would thrive in the particular district in which it is to grow. Thomas G. Frankton, Staindrop.

YEW POISONING (see pp. 263, 297, 313, 325).—Mr. Elwes will find the explanation of the somewhat perplexing account of the poisonous properties of the Yew tree in *Wilson's Rural Cyclopaedia*, Vol. IV., p. 789, where a statement is quoted from Youatt's *Treatise on Cattle*, giving the results of mixing Yew leaves in definite proportions with fodder. From them it appears: (1) That animals with lowered vitality, from fasting or other causes, die when a certain amount of the Yew is eaten; (2) that healthy animals can get accustomed to the poison, as the arsenic eaters of Styria accustom themselves by degrees to poisonous doses. That the Yew contains a poisonous alkaloid, taxine, which is a heart poison, there can be no doubt. The alkaloid is described in Beilstein's *Handbook of Organic Chemistry*, Vol. III., p. 948. What has not yet been ascertained is whether different species of *Taxus* or different varieties of *T. baccata* contain the same amount of taxine, but so far as cases of poisoning have shown, the foliage of the Irish Yew, *Taxus baccata* var. *fastigiata*, is as poisonous as that of the typical form. E. M. Holmes, Ruthven, Sevenoaks.

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 23.—The outstanding exhibit at the fortnightly meeting, held on Tuesday last, in the society's hall, Vincent Square, Westminster, was a group of *Begonias*, of the *Gloire de Lorraine* type, that was awarded a Gold Medal. Other floral groups included *Carnations*, *Chrysanthemums*, ornamental shrubs, trees and Ferns.

The Floral Committee awarded eleven medals to groups, and recommended Awards of Merit to three new *Chrysanthemums*, and a variety of Perpetual-flowering *Carnation*.

The Orchid Committee had many novelties submitted for awards, and recommended one First-class Certificate and five Awards of Merit. Four groups of Orchids were awarded medals.

The Fruit and Vegetable Committee found little for adjudication, the only awards in this section being a provisional Award of Merit to a new Quince from Serbia, and a Silver Banksian Medal for South African preserves.

At the 3 o'clock meeting in the lecture room Mr. C. Herman Senn delivered an address on "Leaf Vegetables and How to Cook Them."

Floral Committee.

Present: Messrs. H. B. May (in the chair), C. T. Druery, G. Reuthe, George Paul, John Green, James Hudson, R. C. Notcutt, W. J. Bean, J. W. Moorman, C. R. Fielder, J. F. McLeod, Wm. Howe, Thomas Stevenson, Wm. Bain, C. Dixon, A. Turner, Chas. E. Pearson, W. Cuthbertson, J. T. Bennett-Poë, W. P. Thomson, E. H. Jenkins, Edward Mawley, and F. Page Roberts.

AWARDS OF MERIT.

Carnation Louvain.—A variety of the Perpetual-flowering type of rich pink colour. Shown by Mr. A. F. Dutton.

Chrysanthemums Louisa Pockett, *Aristocrat* and *Monica Mitchell*.—See p. 342.

GROUPS.

The following medals were awarded for collections:—

Gold Medal to the Misses TATE and TANNER, Caldecote Towers, Bushey Heath (gr. Mr. F. Streeter), for *Gloire de Lorraine Begonias*. This was a beautiful exhibit, imposing in arrangement and a triumph in good cultivation, for each plant was a superb specimen. The back was formed of three arches; from the centres of each arch hung a basket specimen like a great globe of flowers. The centre of the group was composed of the *White* variety, that appears to have a more pyramidal habit than the pink. But whether pink or white, we have never seen this floriferous subject shown better.

Silver-gilt Flora Medal to Messrs. W. WELLS AND CO., LTD., Merstham, for a table of *Chrysanthemums*. The firm's novelties in large exhibition varieties were arranged in bold masses at the back, the more notable being *Edith Cavell*, Mrs. G. L. Wiggs (yellow), *Queen Mary* (white), *W. Rigby* (yellow), and Mrs. J. Gibson. The place of honour in the centre was occupied by a mass of the new *Louisa Pockett* (see Awards). The inclusion of *Decorative* and *Single* varieties such as *November Gold*, *Heston Pink*, *Western King* (white), *Crimson Velvet*, *Molly Godfrey* and *Yellow Perfection* added further interest and variety.

Silver Flora Medals to Mr. AMOS PERRY, Enfield, for a group of hardy Polystichums in some seventy varieties. The plants were in fine condition, and many were very large specimens. A selection includes *P. plumosum medio-deficiens*, *P. aculeatum cristatum*, *P. angulare* varieties *grande*, *densum*, *densum robustum*, *plumosum*, *plumosum densum*, *p. productum* and *p. stipulatum*. Messrs. J. PIPER AND SONS, Bayswater, for a group of ornamental shrubs and trees, including *Conifers*. Messrs. H. B. MAY AND SONS, The Nurseries, Edmonton, for Ferns, *Cyclamens* and *Begonias*, the last including varieties of the *Gloire de Lorraine* and winter-blooming types. There were many beautiful varieties of *Scolopendrium vulgare*. As exemplifying the great diversity in this

hardy Fern, fronds of the various types were displayed on boards, and made one of the most interesting exhibits in the show.

Silver Banksian Medal to Mr. L. R. RUSSELL, Richmond, for ornamental shrubs, Ivies, and berried plants. A specimen of *Hedera Helix spectabilis aurea*, showing magnificent autumn tinting, was much admired, as were the compact little fruiting specimens of *Aucuba japonica vera nana* and *Crataegus pyracantha*.

Bronze Flora Medals to Messrs. ALLWOOD BROS., Wivelsfield, for *Carnations* of the Perpetual-flowering type. This small, but select, exhibit included the firm's novelties *Niobe*, soft-salmon; *Higbland Lassie*, a white-ground picotee edged with red, and *Brilliant*, white ground flaked with chocolate-red. Messrs. H. CANNELL AND SONS, Eynsford, for zonal-leaved *Pelargoniums* and single *Chrysanthemums*. The brilliantly coloured *Pelargoniums* afforded a pleasing change to the other flowers. The best were the new *Fireball*, scarlet; *Mine*, Kovalesky, pale salmon; *Lady Roscoe*, pink; and *Snowstorm*, white. The *Chrysanthemums* included the beautiful white *Moncrieffie* variety. Messrs. CUTBUSH AND SON, Highgate, for *Ericas*, *Liliums* and finely coloured *Dracaenas*.

Bronze Banksian Medals to Mr. A. F. DUTTON, Iver, Buckinghamshire, for a group of the new *Carnations Louvain*, and *Chelsea*, the latter having a white ground flaked with rose colour; and Messrs. J. CHEAL AND SONS, Crawley, for sprays of ornamental shrubs and trees.

Orchid Committee.

Present: Messrs. J. Gurney Fowler (in the chair), Jas. O'Brien (hon. secretary), J. Wilson Potter, R. A. Rolfe, Stuart Low, Gurney Wilson, F. J. Hanbury, Pantia Ralli, R. G. Thwaites, W. Cobb, J. Charlesworth, J. Cypher, W. H. Hatcher, C. H. Curtis, H. G. Alexander, A. Dye, S. W. Flory, W. Bolton, R. Broomau White, and Sir Harry J. Veitch.

AWARDS.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya Alex (*L.-C. Tunis* × *C. Dowiana aurea*), from Messrs. STUART LOW & CO., Jarvisbrook, Sussex. A handsome hybrid with well-formed flowers; the sepals and petals are coloured orange-yellow with a lilac shade, the lip ruby-crimson with a yellow disc. *L.-C. Tunis* (*C. Warszewiczii* × *L. cinnabrosa*) in this cross produces very fine shades of colour, while *C. Dowiana* gives the form.

AWARDS OF MERIT.

Laelio-Cattleya King Manoel (parentage unrecorded), from J. GURNEY FOWLER, Esq., Brackenhurst, Pembury. A superbly coloured flower of medium size and very distinct shape. The sepals and petals are copper-colour, with a deep orange shade. The lip has a narrow yellow middle, the expanded front lobe being dark blood-red; the base is crimson with yellow markings.

Cypripedium Priory Beauty (*Earl of Tankerville* × *unknown*), from R. WINDSOR RICKARDS, Esq., Usk Priory, Monmouthshire. A fine *Cypripedium* in size, colour and shape. The handsome dorsal sepal is white with a pale-green base, the central area bearing large violet crimson blotches. The broad petals and lip are honey-yellow tinged with red-brown.

Cypripedium Iona Priory variety (*bellatulum* × *Fairrieana*) (see fig. 121), from R. WINDSOR RICKARDS, Esq. The flowers are cream-white, heavily tinged and veined with purple, and inclining more towards *C. Fairrieana* than the original cross, which was shown by the Duke of Marlborough, and received the Award of Merit on January 7, 1913.

Cypripedium Swallowtail (*Fairrieana* × *Monsieur de Certe*), from R. WINDSOR RICKARDS, Esq. A flower of medium size and good shape, the evenly distributed marking of the dorsal sepal being a good feature.

Cattleya Maggie Raphael (*Sandhurst variety*), from Messrs. ARMSTRONG & BROWN, Orchidhurst, Tunbridge Wells. In the pure-white of its sepals and petals this variety resembles the *Orchidhurst* variety, but the showy rose-purple lip is veined with yellow.

GENERAL EXHIBITS.

J. GURNEY FOWLER, Esq., Brackenhurst, Tunbridge Wells, staged a selection of fine hybrids, among which were noted *Laelio-Cattleya* Nelthorpe Beaulere (L.-C. *Gottiana* × C. Enid), with large rose-pink flowers shaded with yellow, the lip resembling one of the finest C. *Mossiae*; the spike bore four flowers. L.-C. Mrs. Evelyn Norrie, the handsome yellow-petalled form which had previously obtained a First-class Certificate; the beautiful *Cypripedium* *Leeanum* J. Gurney Fowler, which had also obtained the premier award, and still stands unmatched in its class; some fine *Cattleya* *Tityus* and other *Cattleyas*; and a noble plant of typical white *Odontoglossum crispum*, with a large branched spike proceeding from a pseudo-bulb of extraordinary size.

R. WINDSOR RICKARDS, Esq., The Priory, Usk, was awarded a Silver Flora Medal for a group of *Cypripediums*, some of which were seedlings, and all of extra good quality. Three received Awards, and others noted as being especially fine were C. *Cyclops* (*Actaeus* × *fulshawense*), a noble, well-marked flower; C. *The Baron*, well known, but still one of the best; C. *Grittleton* (C. *Curtisii* × C. *Stevensii*); C. *Rossetti* *Perfection*; C. *Satyr*; and a fine hybrid between C. *Mrs. W. Mostyn* and C. *insigne* *Harefield Hall*. Several good hybrid *Cattleyas* were also included in this collection.

Sir JEREMIAH COLMAN, Bart., Gatton Park, showed the new hybrids *Laelio-Cattleya* *Eyeringiana* (C. *Bowringiana* × L. *Eyermanniana*) and *Cattleya* *Gatton Ruby* (*amabilis* × *Hardyana*).

R. G. THWAITES, Esq., Chessington, Streatham (gr. Mr. Harrington), exhibited the new *Odontoglossum* *Chloë* (*Groganiana* × *crispum*), a flower of intensely dark claret-colour, with the peculiar rose-crimson lip of O. *Groganiana*.

F. J. HANBURY, Esq., Brockhurst, East Grinstead, displayed a spike of his new *Cattleya* *Portiata* (*Portia* × *labiata*), like C. *labiata* in size and colour, but with darker and more tubular lip.

E. WHITEAWAY, Esq., Feltham Lodge, Feltham (gr. Mr. J. Tait), sent for name a handsome flower of *Brasso-Cattleya* *William Pitt* (B.-C. *Digbyano-Mossiae* × C. *Octave Doin*).

WILLIAM BOLTON, Esq., Wilderspool, Warrington, showed a selection of *Cypripedium* flowers of which his pure-white C. *Boltomii* was the best.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for a fine group. At the back were excellent hybrid *Odontoglossums*, while over the front drooped sprays of the white and rose *Trichopilia suavis*, with a profusion of fragrant flowers; in the centre were the orange *Epidendrum vitellinum* and scarlet *Odontodia* *Joan*. A pretty novelty was *Sophro-Laelio-Cattleya* *Orion* (S.-L.-C. *Menippe* × C. *Fabia*), with an intensely dark lip.

Messrs. J. CYPHER & Sons, Cheltenham, were awarded a Silver Banksian Medal for an excellent representative group of finely grown *Cypripediums*, the forms of C. *Leeanum*, C. *Madame Jules Hye*, C. *Priam*, C. *insigne* *Harefield Hall* and other favourites being well shown. Scarlet *Odontodia* *Diana* were effective in the centre.

Messrs. SANDER & Sons, St. Albans, were awarded a Silver Banksian Medal for a group in which many interesting species were represented with good hybrid *Cattleyas*, *Laelio-Cattleyas*, and other *Orchids*. *Cattleya* *Snow Queen* (*Gaskelliana* *alba* × *Suzanne Hye* de Crom), a good white variety and C. *Peacock* (*Hardyana* × *fulvescens*) were new hybrids.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, staged a small group of fine new hybrids which included *Cattleya* *Rhoda Primrose Dame*, a pretty primrose-coloured flower with purple-veined lip; *Laelio-Cattleya* *Rubens* *Orchidhurst* variety, a fine flower, with deep-purple lip; *Brasso-Cattleya* *Apollo* (C. *Mendeli* × B.-C. *Digbyano-Mossiae*), of good shape; *Sophro-Cattleya* *Thwaitesii* *Orchidhurst* variety, dark salmon-red with yellow lip having a deep-red front; several good *Cypripediums*, and half a dozen seedling *Odontoglossums* flowering for the first time with blooms of great beauty.

Messrs. J. & A. McBEAN, Cooksbridge, staged a group of hybrids in which their *Sophro-*

Cattleya *Pearl*, *Odontonia* *brugensis*, and scarlet *Odontodas* were effective.

Messrs. FLORY & BLACK, Orchid Nursery, Slough, showed *Odontodia* *Nena* (Oda. *Vuyls-tekeae* × Odm. *percultum*). It is a bright flower, as large as the *Odontoglossum* parent, coloured bright-red with a veining of white in the petals; *Brasso-Cattleya* *Merlin* (B.-C. *Digbyano-Schroderae* × C. *labiata*), large, lilac-pink with greenish disc to the lip; the rare *Trias disciflora*, and *Cypripediums*.

Messrs. STUART LOW AND Co. sent *Cattleya* *Trianae Reineckiana*, white with purple lip, and C. *Boadicea* (*Gaskelliana* × *Hardyana*).

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (in the chair), Messrs. Jos. Cheal, W. Bates, Edwin Beckett, H. Markham, G. Kelf, A. Bullock, E. A. Bun-

SCOTTISH HORTICULTURAL CHRYSANTHEMUM SHOW.

NOVEMBER 19 AND 20.—The 30th annual Chrysanthemum exhibition and winter flower show of this association was held in the Waverley Market, Edinburgh, on these dates. The exhibition was the smallest for many years past. This was in part due to the war and in part to a severe frost on the eve of the show, which led to the withdrawal of a considerable number of entries at the last moment. The exhibits were of good quality, and in some of the classes for cut blooms the flowers were of great excellence. In the Scottish Cup class especially the blooms were as fine as have been seen at any of these shows, as the pointing in the 1st and 2nd prize exhibit shows. Fruit also was very good. The exhibition was opened by Lady Jellicoe, and there was a good attendance at the opening. A



FIG. 121.—CYPRIPEDIUM IONA PRIORY VARIETY.

(See Awards by the Orchid Committee, p. 340.)

yard, Owen Thomas, W. Poupart, A. R. Allan, A. W. Metcalfe and J. Udale.

AWARD OF MERIT.

Quince Vranja.—A provisional Award of Merit was granted to this new Quince, which is of Serbian origin. The fruits are pyriform, about 5 to 6 inches long, and some of them bore a strong resemblance to Pitmaston Duchess Pear, but the colour is a deeper yellow. The tree is said to be a strong grower and a prolific cropper. The fruit keeps much longer than the ordinary Quince. Shown by Earl DUCIE, Tortworth Court, Gloucestershire (gr. Mr. J. Banting).

A Silver Banksian Medal was awarded to Messrs. E. WESTMACOTT AND Co., 368, Strand, London, for South African preserves.

Mr. MASON, Cokenach Gardens, Royston, showed a promising new Apple, named Cokenach Pippin.

sale of plants and flowers was held in conjunction with the show, in aid of the Scottish branch of the War Horticultural Relief Fund, and it is expected that a substantial sum will be handed over to this fund.

CUT BLOOMS.

There were four exhibits for the City of Edinburgh Queen Victoria Memorial prizes, presented by the Lord Provost, Magistrates and Town Council of Edinburgh, and offered for a display of single and double Chrysanthemums arranged on a table 12 feet by 8 feet, and decorated with Ferns, foliage plants, and cut flowers. The 1st prize, the City of Edinburgh Cup and £10, was awarded to Mrs. BOASE, Binrock, Dundee (gr. Mr. J. Beats), this being the second occasion in succession on which this prize has been awarded to the same competitor. The 2nd prize was won by the Right Hon. Lord

ELPHINSTONE, Carberry Tower, Musselburgh (gr. Mr. D. Kidd), and the 3rd by A. SINCLAIR HENDERSON, Esq., Seathwood, Dundee (gr. Mr. G. Scott).

In the Scottish Challenge Cup Class, which is the leading one for large blooms, and for which 10 vases of Japanese Chrysanthemums in 10 varieties, 3 blooms in a vase, are required, there were 8 entrants. The cup (which is held by the winner for one year), was won by the Hon. Mrs. ASKEW ROBERTSON, Ladykirk, Northam-on-Tweed (gr. Mr. G. Little); 2nd, J. GRAEME THOMSON, Esq., Norwood, Alloa (gr. Mr. J. Small); 3rd, D. THOMSON, Esq., Greenfield, Alloa (gr. Mr. L. McLean); 4th, the Hon. Colonel BAILLIE, of Dochfour, Inverness (gr. Mr. R. Mackenzie). The blooms shown in the 1st and 2nd prize exhibits, with the points awarded to them, were as follows: 1st, Fred Green, 10; Wm. Turner, 11½; Lady Talbot, 10½; His Majesty, 11½; Mrs. G. Drabble, 10; Francis Jolliffe, 7; Mrs. A. E. Roope, 12; Queen Mary, 10½; Frances Rowe, 9; W. Rigby, 9. 2nd, Francis Jolliffe, 7½; Lady Talbot, 8½; Mrs. A. E. Roope, 11½; Queen Mary, 11½; Mrs. R. C. Pulling, 10; Mrs. G. Drabble, 10½; Mrs. James Gibson, 11; Wm. Turner, 11; Bob Polling, 11½; Thos. Lunt, 7½. It will thus be seen that Mrs. ROBINSON gained only half a point more than Mr. THOMSON—the numbers being 101 and 100½ points respectively out of a possible 120. D. THOMSON, Esq., and the Hon. Colonel BAILLIE obtained 88 and 86½ points respectively.

J. GRAEME THOMSON, Esq., excelled in the class for 12 blooms of Japanese Chrysanthemums shown on boards, the Hon. Colonel BAILLIE being placed 2nd, and D. THOMSON, Esq., 3rd.

In the vase classes for Japanese Chrysanthemums, Mrs. N. HAMILTON-OGILVY, Archerfield, East Lothian (gr. Mr. Geo. Mackay), was placed 1st for 2 vases in one variety; the Hon. Mrs. ASKEW ROBERTSON 1st for 4 vases in twelve varieties; and W. H. DOBIE, Esq., Dollarbeg, Dollar (gr. Mr. J. Waldie), excelled for 4 vases in 4 varieties, and 2 vases in 6 varieties respectively.

In the two decorative classes, for 3 vases and 1 vase respectively, Mrs. N. HAMILTON-OGILVY, Winton Castle, East Lothian (gr. Mr. J. M'Fadyen), showed best.

In the classes for single Chrysanthemums, Mrs. HUNTER, Thurston, East Lothian (gr. Mr. W. Aitchison), excelled for 6 vases in 6 varieties; Mr. J. DAVIDSON, Bonnyrigg, for 3 vases in 3 varieties; and Mrs. N. HAMILTON-OGILVY, Winton Castle, in the other class for 3 vases in 3 varieties. G. R. ANDERSON, Esq., Manor House, Belhaven, Dunbar (gr. Mr. W. Hart), won the Challenge Cup, presented by Messrs. Young and Co., Cheltenham, for 1 vase of perpetual-flowering Carnations, in not fewer than 6 varieties.

Mrs. HAMILTON-OGILVY, Winton Castle, was also successful in the class for 4 vases Chrysanthemums as grown for market.

The Silver Medal offered for the best Chrysanthemum bloom in the show was awarded to Mrs. N. HAMILTON-OGILVY, Archerfield (gr. Mr. G. Mackay) for the variety Wm. Turner; while the Silver and Bronze Medals offered for new Chrysanthemums (not in commerce) were awarded to Messrs. WELLS AND CO., and W. G. PRIRIE, Dalhousie Castle, Midlothian, for blooms of Edith Cavell and Gem respectively.

PLANTS.

J. CHISHOLM, Esq., Boroughfield, Edinburgh (gr. Mr. W. Michie), excelled in the classes for (a) 6 Chrysanthemums, (b) 4 Japanese Chrysanthemums, (c) 1 large-flowered Chrysanthemum, and (d) 1 single Chrysanthemum; while GEORGE COWAN, Esq., Edinburgh (gr. Mr. J. Hodges), showed the best 3 Chrysanthemums in pots not exceeding 7 inches. The Right Hon. the Earl of HOME, K.T., Douglas Castle, Lanark (gr. Mr. A. M'Millan), won the 1st prizes in the 4 classes for Palms, and also for 4 decorative foliage plants, 6 table Ferns, and 6 specimen Ferns. Sir R. C. MUNRO FERGUSON, Raith, Kirkcaldy (gr. Mr. D. McLean), was placed 1st for 6 *Primula sinensis*, for 6 *P. obconica*, and for 4 *Begonia Gloire de Lorraine* respectively. In the other plant classes, Wm. BAIRD, Esq., Elie, Fife (gr. Mr. A. A. Law), excelled for 6

table plants (Ferns excluded); ex-Provost DUNCANSON, Fenton House, Alloa (gr. Mr. C. Palmer), for 6 pots of Roman Hyacinths; the Right Hon. A. J. BALFOUR, Whittinghame, E. Lothian (gr. Mr. G. Anderson), for 6 Cyclamen, and for 6 *Salvia splendens*; the Right Hon. Lord ELPHINSTONE for 4 winter-flowering Begonias and M. NAIRN, Esq., Dysart House, Fife (gr. Mr. A. Robb), for 1 *Cypripedium*.

FRUIT.

For 4 bunches of Grapes, distinct, CHARLES H. SHAW, Esq., Edenhall, Langwathby (gr. Mr. W. Scott), was awarded the 1st prize, and the Right Hon. Lord ELPHINSTONE the 2nd. The varieties shown by Mr. SHAW were Appley Towers, Black Alicante, Lady Hutt and Muscat of Alexandria. In the "two bunch" classes, Wm. MACKAY, Esq., Ascog, Bute (gr. Mr. D. Halliday), excelled for one black and one white variety, with Black Alicante and Muscat of Alexandria; and the same competitor was also placed 1st for 2 bunches of Muscat of Alexandria. C. W. COWAN, Esq., Dalhousie Castle, Midlothian (gr. Mr. W. G. Pirie), showed the best 2 bunches of Black Alicante; Mrs. HAMILTON-OGILVY, Winton Castle (gr. Mr. J. M'Fadyen), was placed 1st for 2 bunches of Gros Colman; and Lord ELPHINSTONE excelled for Lady Downes, and for 2 bunches of any other variety of Grape, with Mrs. Pince. For single bunches of Appley Towers and Lady Hutt respectively, the 1st prizes were won by the Right Hon. A. J. BALFOUR, Whittinghame, East Lothian (gr. Mr. G. Anderson), and C. H. SHAW, Esq., Edenhall, Langwathby.

Lady CHARLES MERCER NAIRNE, Meikleour House, Perthshire (gr. Mr. J. Chisholm), was successful in winning the 1st prize in the class for 12 dishes of Apples, and 6 dishes of Pears, grown in Scotland, Mr. R. G. SINCLAIR, Congalton, East Lothian, being placed 2nd; and the Right Hon. Lord DESBOROUGH, Panshanger, Hertfordshire (gr. Mr. R. Staward), was 1st for 18 dishes of Apples. In the class for 6 varieties of Pears, Viscount DE VESCI, Abbeyleix, Queen's County (gr. Mr. G. M'Glashan), showed best; whilst for 6 varieties of the same fruit, grown in Scotland, His Grace the Duke of RICHMOND AND GORDON, Gordon Castle, Fochabers (gr. Mr. Chas. Webster), obtained the 1st place. C. L. GORDON, Esq., of Threave, Castle Douglas (gr. Mr. J. Duff), excelled for 6 varieties of culinary Apples and 6 varieties of dessert Apples respectively. In the class for market gardeners, in which 2 baskets of culinary and 1 basket of dessert Apples were required, the 1st prize was awarded to Mr. J. M'KENZIE, Lochend, Dunbar; and the 2nd to Mr. R. G. SINCLAIR, Congalton. The Duke of RICHMOND AND GORDON was the only exhibitor of bottled fruits, and he was awarded the 1st prize.

VEGETABLES.

A. A. ALLEN, Esq., M.P., Tulliebelton House, Perthshire (gr. Mr. W. Harper), had the best collection of 9 kinds of vegetables, Captain HAIG, Blairhill, Rumbling Bridge (gr. Mr. H. Cumming), being placed 2nd. In the single dish classes, the following were the winners of the 1st prizes:—Tomatos, THOS. WATSON, Esq., Lanark (gr. Mr. W. M'Kenzie); Leeks, A. A. ALLEN, Esq., Tulliebelton (gr. Mr. W. Harper); Cucumbers and Brussels Sprouts, W. H. DOBIE, Esq., Dollarbeg (gr. Mr. J. Waldie); Cauliflower, Mrs. HAMILTON-OGILVY, Winton Castle (gr. Mr. J. M'Fadyen); Cabbage, G. D. MACKAY, Esq., Inverlaimond, Craigmoad (gr. Mr. J. W. Sword); Savoy, MICHAEL NAIRN, Esq., Dysart House, Fife (gr. Mr. A. Robb); curled Greens and Parsley, the Right Hon. the Earl of HOME, Douglas Castle, Lanark (gr. Mr. A. M'Millan); Celery, Mr. JAS. PATERSON, Roxburgh; Beetroot, Mr. A. TAYLOR, Earlston; Parsnips, Mr. W. SCOTT, Harvieston, Midlothian; Carrots, Mr. G. SCOTT, Pencailand, East Lothian; Turnips, JAMES REID, Esq., Coulter Mains, Biggar (gr. Mr. R. Ballantyne); Onions, the Right Hon. the Earl of DESBOROUGH, Panshanger, Herts (gr. Mr. R. Staward); Jerusalem Artichokes, Mrs. McLEAN, Alloa (gr. Mr. J. Fairholm); Potatoes, Wm. BAIRD, Esq., of Elie, Fife (gr. Mr. A. A. Law); and for any other vegetable, Miss BURTON, New Saughtonhall, Polton

Mr. Wm. GILCHRIST, Middlemills, Lasswade, was awarded the 1st prize, which included a Gold Medal, for 12 bunches of Leeks grown for market, in a class open only to Edinburgh market-growers.

NON-COMPETITIVE EXHIBITS.

The following Awards were made to non-competitive exhibits:

Gold Medals.—Messrs. W. WELLS AND CO., Merstham, Surrey, for Chrysanthemums; Messrs. STORRIE AND STORRIE, Glencarse, Perthshire, for fruit trees; Mr. D. W. THOMSON, Edinburgh, for Apples; and the EDINBURGH AND EAST OF SCOTLAND COLLEGE OF AGRICULTURE for bottled fruits.

Silver-Gilt Medal to Mr. R. G. SINCLAIR, Congalton Gardens, East Lothian, for Apples and Pears grown in East Lothian.

Silver Medal to Messrs. JOHN FORBES (HAWICK), LIMITED, for Carnations.

ROYAL METEOROLOGICAL.

NOVEMBER 17.—The first meeting of this Society for the present session was held on Wednesday, the 17th inst., at 70, Victoria Street, Westminster, Major H. G. LYONS, D.Sc., F.R.S., president, in the chair.

Mr. J. S. DINES, M.A., read a paper on "The Mounting and Illumination of Barometers and the Accuracy Obtainable in the Readings," in which he described the method of mounting and illuminating the barometer in accordance with the plan adopted at the Meteorological Office, South Farnborough. This consisted in hanging the barometer against a window, with a thin wooden screen, 6 inches wide, placed behind it about an inch from the tube. In this screen was a narrow slit, ¾ inch wide, which came immediately behind the top of the mercury column, and admitted light from the window. The opening in the screen was covered with a piece of ground-glass or thin paper, which prevented the passage of direct sunlight and gave a diffused illumination under all circumstances. Another feature of the mounting was the clamping of the bottom of the tube, as was generally done in the case of instruments of the Fortin type, in order to prevent swinging of the barometer. The paper also contained an account of several sets of comparative readings of the barometer taken by different observers and between different types of instruments, which showed a remarkably close agreement with one another. The prevalent habit of tapping the instrument before reading was not considered desirable.

A paper by Mr. N. A. COMISSOPULOS, of the Egyptian Meteorological Office, entitled "On the Seasonal Variability of Rainfall over the British Isles," was also read.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 22.—At the meeting of the Floral Committee of the above Society, which was held on Monday last at the Essex Hall, Strand, sixteen new varieties were submitted for awards, but only three received First-class Certificates and one a Card of Commendation. The Committee expressed a wish to see again an attractive Anemone variety named Cordelia, which was a rather small flattish disc. The brightest and most attractive single-flowered variety, appropriately named Crimson Velvet, was passed over, probably because the florets were too thin in texture to travel well, but it would be a valuable variety for decorative purposes.

Interesting sports from Julian Valet, a popular white market variety, were shown by Mr. GEORGE PRICKETT, Enfield Highway. In his nurseries a plant has thrown sprouts of rich golden and of violet-purple colours.

FIRST-CLASS CERTIFICATES.

Louisa Pockett.—A very large Incurved Japanese variety of Mrs. Gilbert Drabble type, though the florets are much narrower. The blooms measure 9in. in depth and 10in. across. The colour is officially described as being pearly-white, but there is a light sheen of the palest apricot in some of the florets. Shown by Messrs. W. WELLS AND CO., LTD.

Aristocrat.—This is a superb, single-flowered variety of large size, with five to six rows of ray florets which are attractively reflexed at the tips. The colour is bright-yellow.

Monica Mitchell.—An attractive carmine-crimson single of Merstham Jewel type. The disc is small and surrounded by a narrow band of yellow. This, and the foregoing, were shown by Mr. NORMAN DAVIS, Framfield.

CARD OF COMMENDATION.

Rifleman F. Kent.—A highly decorative golden lawn-coloured single of Miss Mary Anderson size and form. Shown by Mr. G. KENT, Norbury Park Gardens, Dorking.

At the Society's Exhibition on the 11th inst., the 2nd prize in the class for 24 Japanese blooms, distinct, was won by G. L. WIGGS, Esq., Rockshaw, Merstham (gr. Mr. M. Sargent).

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

NOVEMBER 8.—The monthly meeting of this society was held at the R.H.S. Hall on Monday, the 8th inst. Mr. Chas. Curtis presided. A vote of sympathy was passed to the senior trustee, Mr. James Hudson, on the death of his wife, which was carried by the members in silence. Three new members were elected. One member was allowed to withdraw £48 12s. 3d. from his deposit account, still leaving £10 to his credit in the society's books, and one lapsed member withdrew £42 7s. 7d.; two members were assisted from the Convalescent Fund. The sick pay for the month included private section, £69 6s. 3d.; State section, £19 7s. 8d.; and maternity claims, £9.

GENERAL BULB-GROWERS' OF HAARLEM.

The following Awards have been made by the respective floral committees at the meetings held in July, August and September:—

JULY—FIRST-CLASS CERTIFICATE.

Richardia Giant, sulphur yellow.

AWARDS OF MERIT.

Gladiolus Early Sunrise, salmon-rose; *G. primulinus Alaska*, canary-yellow; *G. p. Latoria*, salmon, striped carmine; *G. p. Lemon Quern*, sulphur-yellow; *G. p. Sunrise*, canary-yellow; *G. (Lem.) Rev. Erbawak*, lavender-blue, border violet; *G. Wilbrink*, rose-shaded lilac; *G. Majestic*, orange-scarlet; *G. de Ruyter*, salmon-rose; *Begonia Gladys*, dark cherry-red; *B. Java*, orange-vermilion; *B. Sumatra*, salmon-rose; *Richardia Oeil noir*, dark sulphur-yellow; *R. Rehmanni carminea*, dark carmine-red.

AUGUST—AWARDS OF MERIT.

Gladiolus Marillo, lilac, shaded white; *G. Mrs. Velthuis*, scarlet; *G. Nora*, light blue; *G. Lord Balfour*, violet and brown; *G. Flora*, citron-yellow; *G. Ivory*, ivory-white; *G. Lucie*, sulphur-yellow, striped carmine; *G. Esclstroem*, white, shaded lilac; *G. primulinus hybrid Vanessa*, salmon; *G. p. hybrid Finula*, clear carmine; *G. p. hybrid Azia*, rose and yellow; *G. p. hybrid Orange Brilliant*, orange; *G. p. hybrid Conqueror*, sulphur-yellow; *Dahlia Latoria*, shaded apricot; *D. Faust*, velvety-red; *D. Luna*, canary-yellow; *D. Insulinde*, copper-red; *D. Porthos*, unicolour lilac; *D. Fourbank*, orange-scarlet; *D. Chrysis*, scarlet-shaded carmine; *D. (Paeony-flowered) Paul Crampel*, orange-scarlet; *D. (Paeony-flowered) Saffrano*, Nanking-yellow, shaded brown.

SEPTEMBER—FIRST-CLASS CERTIFICATE.

Dahlia Dante, a Colerette variety of clear purple colour and pure white colerette; *D. King of the Autumn*, a decorative variety of terracotta colour.

AWARDS OF MERIT.

Dahlia Balmoral (Colerette), clear orange-red, border yellow, colerette yellow; *D. Louis Blackmann (Colerette)*, carmine, colerette pure white; *D. Regularity (Colerette)*, purple, colerette purple-rose; *D. Decision (Cactus)*, clear copper-orange; *D. Ether (Cactus)*, clear rose; *D. Fascination (Cactus)*, carmine-rose; *D. The Quaker (Cactus)*, rose, greenish-white in the centre; *Aster Jupiter*.

ST. NEOTS CHRYSANTHEMUM.

NOVEMBER 2.—The Chrysanthemum Show, held in the Council Schools on the above date, proved very successful, and the Red Cross Society, to whom the proceeds were handed, received a considerable sum. The number of exhibitors was larger than the previous year, and the standard of quality was well maintained. In the open classes, for 18 Japanese blooms distinct, Lady ESMÉ GORDON, Paxton Park (gr. Mr. Clack), was awarded the 1st prize, the 2nd being won by D. CROSSMAN, Esq., Gransden Hall (gr. Mr. F. Dibbin). For 18 incurved blooms, Lady E. GORDON was again successful, Mr. CROSSMAN being placed 2nd. The same two competitors were also placed 1st and 2nd respectively in most of the classes for cut blooms, the positions being reversed in the class for 6 incurved. For 4 vases of Carnations, Mr. CROSSMAN was placed 1st. The classes for table decorations were well contested, and some very fine exhibits were sent in. Vegetables were also well represented, the prize for 8 kinds distinct being awarded to Mr. R. T. HINSBY. Fruits were very well shown, Lady E. GORDON, Mr. D. CROSSMAN, and Colonel DUNCOMBE, Waresley Park (gr. Mr. A. Mitchison), being the chief prize-winners. In the amateurs' classes, there were a number of creditable exhibits. Mr. R. T. HINSBY was successful in gaining the 1st prize for 6 blooms of Chrysanthemums (distinct), and several other 1st prizes. The cottagers' classes were satisfactorily contested, and some very good exhibits were staged.

CORBRIDGE-ON-TYNE GARDENERS.

The annual show of this society was held recently, the proceeds being given to the local nursing institutions.

The exhibits were of a high standard, especially the Japanese Chrysanthemums. Locally-grown fruit was also fine, both in quality and colour.

One of the principal features in the show was the fine collection of Orchids exhibited by ALEX. HEATH, Esq., Gray Court, Riding Mill (gr. Mr. J. Renwick), including a specimen plant of *Cypripedium insigne* Sanderae, with 15 flowers. The Society's Gold Medal was awarded. In the class for 18 vases Japanese, in not fewer than 6 varieties, Lord ALLENDALE, Byrrell Hall, Stockfield (gr. Mr. J. Thomas), was placed 1st; the varieties His Majesty and Mrs. J. Gibson were particularly good; 2nd, C. LACY THOMPSON (gr. Mr. W. A. Appleton). For 12 Japanese blooms in 4 vases (not fewer than 4 varieties), Lord ALLENDALE was again 1st, and Mr. LACY THOMPSON 2nd. For 6 Japanese, C. S. SWAN, Esq., Riding Mill (gr. Mr. J. H. Walton), was placed 1st. For 3 Japanese (not fewer than 2 varieties), Mr. F. M. LAING gained the 1st prize; and for 3 White Japanese, Lord ALLENDALE was 1st, showing fine finished blooms of Wm. Turner. For 3 blooms of a yellow Japanese variety, H. K. McALLAN, Esq. (gr. Mr. R. Griffin), excelled with F. S. Vallis. The decorative and single-flowered classes were well contested, and some fine flowers were shown. In the collection of hardy fruits (not to exceed 12 dishes), Mr. J. C. STRAKER and Lady SCOTT, Riding Mill (gr. Mr. M. Hutchinson), were placed equal. For 2 bunches Grapes, Miss MUSCHAMP, Farnley Hill (gr. Mr. Mark), was awarded the 1st prize.

In the collection of vegetables (hardy), 6 varieties, J. C. STRAKER was 1st, Miss MUSCHAMP 2nd, and Mr. G. HALL 3rd.

BOLTON CHRYSANTHEMUM.

NOVEMBER 19 AND 20.—The annual show of this society was held in the Spinners' Hall, and an excellent display was made in all sections. The proceeds of the exhibition were given to the local infirmary. To judge from the attendance on the opening day, financial results were satisfactory. There was only one open class for large Chrysanthemums, arranged on boards—for 36 Japanese blooms. A good display was made, the prizewinners being Mr. J. JONES, Abergele; A. JAMES, Esq., Rugby (gr. Mr. A. Chandler); and Sir GILBERT GREENALL, Bart., Warrington (gr. Mr. C. Groves), in this order. In the first-

named exhibit fine blooms were noted of Mrs. R. C. Pulling, Queen Mary, F. S. Vallis, His Majesty, W. Mease, W. Rigby, Undaunted and Francis Jolliffe.

Mr. Loo THOMSON, Formby, took the lead for 6 vases of single varieties, with excellent blooms of Molly Godfrey, Metta and Mrs. W. Higgs. Mr. CHARLES TAYLOR, Heaton, was placed 2nd.

In the class for 3 vases of singles, undisbudded, the prizewinners were Mr. A. ADSHEAD, Gatley, and W. T. TAYLOR, Esq., Heaton (gr. Mr. G. Dice).

For 3 vases of decorative blooms, N. GRUNDY, Esq. (gr. Mr. A. Tyrer), and W. HASLAM, Esq. (gr. Mr. H. Baker), were placed in order as named.

For an artistic arrangement of Chrysanthemums and foliage plants, with a mirror for background, GERARD S. PECK, Esq., Heaton (gr. Mr. B. Hardy), won the 1st prize.

Mrs. C. TAYLOR, Heaton (gr. Mr. H. Wainwright), was awarded the 1st prize for a table of cut Chrysanthemums and foliage plants, in which Bamboos were effectively used to give lightness to the exhibit. JOSEPH MAGEE, Esq., Heaton (gr. Mr. J. Trevenna), was placed 2nd, using *Codiaeums* as foliage.

For 6 vases of large-flowered varieties, distinct, 3 blooms in each case, N. GRUNDY, Esq., was awarded the 1st prize. He showed some fine blooms. T. M. PERCY, Esq., Ince (gr. Mr. L. Southern), was awarded the 2nd prize.

In the class for 1 vase of singles, undisbudded, Mr. G. Dice gained the 1st prize, and for 1 vase of Japanese, T. M. PERCY, Esq., was placed first. In the incurved section, N. GRUNDY, Esq., was the winner, and for the basket, Mr. W. BYROM.

In the class for a table of Orchids, Mr. STEPHEN LOWE gained the 1st prize, with a pleasing exhibit. For 2 Orchids in bloom, Mr. W. ASTLEY, Bolton, was successful in gaining the 1st place.

For 3 specimen Orchids, E. TIMBERLAKE, Esq., Worsley (gr. Mr. N. Hodgson), won the 1st prize with a well-flowered *Cypripedium insigne* Sanderae. J. B. HENDERSON, Esq., Heaton, was placed second for a group of Cattleyas.

W. E. THORNTON, Esq., Burnley (gr. Mr. J. E. Ellicot), was awarded the 1st prize for 1 vase of Carnations.

For 2 bunches of black Grapes, E. LORD, Esq., Rawtenstall (gr. Mr. J. Wright), gained the 1st prize, with well-coloured specimens of Black Alicante. The Rt. Hon. the Earl of ELLESMERE, Worsley (gr. Mr. W. Byrom), was placed second. For 2 bunches of white Grapes E. LORD, Esq., was again first with well-berried Muscat of Alexandria.

In the class for 3 pots of Begonias, LEVER TILLOTSON, Esq. (gr. Mr. W. Astin), showed the best exhibit; whilst for table plants Mr. J. NIXON gained 1st prize.

Obituary.

JOHN WHITE.—In the American journal, *Horticulture*, we read of the death of Mr. John White, one of the oldest florists in the United States. He was a native of England, born in Bedford, and emigrated to America when a young man. He settled in Jersey City, where he established a successful florists' business. He specialised in Pansies, and was a frequent exhibitor at shows. He died at Elizabeth, N.J., on October 17, at the age of ninety.

GARDENING APPOINTMENTS.

Mr. E. Marshman, recently for 15 years Gardener at Moreton Manor, Buckingham, and previously Gardener at Linford Hall, Wolverton, Buckinghamshire, as Gardener to R. MILLS, Esq., Stevenage Manor, Basingstoke, Hampshire. [Thanks for 1s. for R.G.O.F. Box.—Eus.]

Mr. R. G. Dix, Gardener for the past 6 years to G. S. BAILES, Esq., Abbey Wells, Woolton Hill, Newbury, as Gardener to the Hon. STRAIT BOUVERIE, High Barn, Godalming, Surrey. [Thanks for 2s. for R.G.O.F. Box.—Eus.]

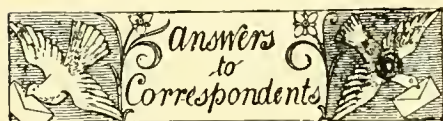
Mr. C. Tutt, for the past 5 years Gardener to CORA COUNTESS OF STRAFORD, Houghton Hall, King's Lynn, as Gardener to Capt. J. G. DUGDALE, The Abbey, Cirencester. [Thanks for 1s. 6d. for R.G.O.F. Box.—Eus.]

THE WEATHER.

WEATHER IN WEST HERTS.

Week ending November 21.

The Highest Barometer Reading Yet Recorded Here in November.—The last eleven days and nights have been all cold for the time of year, and on three of them the exposed thermometer registered respectively 14°, 15° and 12° of frost. The ground is at the present time 6° colder at 1 foot deep and 5° colder at 2 feet deep than is seasonable. Rain fell on one day, but the amount deposited was very small. Some snow was to be seen on the ground from the 15th to the 18th inst., but this was entirely melted by the slight fall of rain above mentioned. During the week three-quarters of a gallon of rainwater and melted snow came through the bare soil percolation gauge, and one gallon through that on which short grass is growing. The sun shone on an average for 2 hours 36 minutes a day, which is three-quarters of an hour a day longer than the mean daily duration for the month. Light airs and calms alone prevailed during the week. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by 1 per cent. By 9 p.m. on the 20th inst. the barometer had risen to 30.784 inches, which is the highest reading recorded here in November during the twenty-nine years over which my records at Berkhamsted extend. E. M.



* * * **NEW POSTAL RATES.**—Contributors and correspondents are reminded that under the new postal rates, which came into operation on the 1st inst., letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopenny, and thereafter at the rate of $\frac{1}{2}$ d. every two ounces.

APPLES AFFECTED WITH WOOLLY APHIS: *Midland.* Your proposal to transplant the trees is not to be recommended. If you dig them up, burn them, and buy fresh two-year-old plants; half-standards would cost only about 25s. for fifty. Probably some of the trees that have been standing for six years would die if transplanted, and the rest would be dwarfed. Fresh young trees would grow much better, and you could choose the varieties you fancy. Cyaniding would probably not kill the woolly aphides in crevices of the bark, but in any case it would not destroy the eggs. Therefore you would have to repeat the process after the eggs had hatched, and the delay would increase the chance of the trees not living when transplanted. If, however, the trees are of valuable varieties, you might try the following plan: Spray or paint them all over with thick lime-wash made with the best Buxton lime, which you can obtain from the Dowling Lime Co., of Buxton. Do this shortly before the buds burst. As there are not many trees, and they have not large tops, the application of the lime-wash by a brush would not cost much, and you could put on a thicker coat than by spraying. The strength could be $\frac{1}{2}$ cwt. to 100 gallons of water, or even more if you painted the trees. The lime should be slaked in the orchard, a little at a time, and applied while hot. This would kill all the aphides it touched, and would also clear the trees of rough bark and moss, thus destroying shelters for the insects. Besides, according to Mr. Theobald, it would go far towards killing any aphides hatched from eggs. If any insects appear in the spring or summer, paint the colonies with crude methylated spirit once a week till all the aphides are killed. This treatment has proved successful in an infested nursery patch of hundreds of young trees, and not one in a hundred showed a trace of the pest after being transplanted. You could plant fresh trees on the other piece of land, and then, if the old ones cannot be cleansed of the pest, you could dig them up and burn them. No advantage would be gained by dressing the land with flowers of sulphur, and a heavy dressing might injure young trees.

BEGONIAS FAILING: *F. C.* There is no disease present in the Begonias you send. The fault

must be in the conditions of cultivation; probably the atmosphere has been too close and moist.

CYANIDING GREENHOUSES: *L. G.* The four ounces of water mentioned in our previous reply on this subject are, as you suggest, fluid ounces. The directions given were intended for cyaniding a house of mixed plants, but the Ferns you mention, such as *Pteris*, *Adiantum*, and *Asplenium*, are very delicate, and if you fumigate the house we would advise you, if possible, to remove them. The *Pelargoniums* are not so likely to be injured if you use the proportions given. With reference to your statement that the house is in bad repair, if there are any openings or holes by which the gas could escape, the whole value of the fumigation would be lost. You should be very careful not to subject yourself or anyone who assists you to the fumes, as they are exceedingly poisonous.

DUCKWEED: *C. N.* Use copper sulphate, as recommended in *Gardeners' Chronicle*, April 10, 1915, p. 204.

FRUIT FARMING: *G. F.* You ask what return can be expected per acre from an "average" fruit farm, and the size of farm required to give a yearly profit of £300. The returns would vary, according to the nature of the farm and the grower's skill. For example, less land would be needed if an intensive system were adopted. Strawberries being grown between trees and bushes, than if only fruit trees were grown. A successful man might average a yearly profit of £300 from 50 acres of mature and healthy trees, while another might get only half as much, or even lose money. The labour required on a fruit farm of any given size depends upon the crops grown, upon the character of the soil and its liability to grow weeds. At least six regular men would be needed on 50 acres, with many more hands at certain seasons of the year. There are numbers of districts in this country where there would be a good chance of success, and much good fruit land exists in Kent, Worcestershire, Herefordshire, Norfolk, and some other counties. A place not far from a railway line serving the northern markets is to be recommended, rather than one serving London, and there is an advantage in being isolated rather than in the midst of a multitude of growers, in view of liability to insect and fungous pests. Planted fruit farms can be rented in some parts of the country at £5 to £10 per acre per annum. The best plan would be to see land agents in districts considered desirable. A year's experience on the farm of a grower who grows, prunes, grades, and packs well would be sufficient training for an intelligent man. Experience in the tropics would not be of much, if any, value to a person starting to grow fruit in this country.

GALLS ON FIR: *M. H. D.* The galls on the twig of Fir are made by the larvae of *Adelges abietis*; they are formed by the accumulation of sap around punctures made by the queen at the axils of the young leaves, causing their bases to thicken. In the punctures the queen lays her eggs, hence the presence in due course of young larvae. If the trees are much infested they should be cut down and the twigs burnt. If, however, they are young and not seriously injured, all the galls should be carefully removed, so as not to tear the shoots, and immediately burnt. To prevent further attacks the trees should be sprayed in July with any of the ordinary aphid washes. Trees growing in heavy, wet clay are usually attacked more seriously than those in soil of a more open texture.

GALLS ON POPLAR: *Poplar.* The galls on the petioles of the leaves you send are caused by an insect known as *Pemphigus bursarius*. Its operations do not seem to retard the growth of the leaf or twig in ordinary circumstances, and it is probable that the death of the trees you mention was caused chiefly by unsuitable soil, to which the unhealthy condition of the leaves only contributed. You might find it possible to check the pest by spraying the trees with a strong solution of quassia, which would render

the twigs distasteful to the queen, and thus deter her from laying eggs. This should be done in the early spring, just before the bursting of the leaf-buds.

LESCHENAULTIA BILOBA MAJOR: *T. C.* This plant is perhaps the most difficult of all the hard-wooded greenhouse plants to keep in good health for any length of time, and it is very unlikely that it can be kept in good condition very long in an ordinary room. A light, airy greenhouse is essential for its well-being, and a little more warmth than is required by the bulk of hard-wooded plants. If kept for any length of time in a temperature below 45°, it is almost sure to be affected by mildew. This plant at all times requires great care in watering, and, while it should never be allowed to get dry at the roots, an overdose of water will just as surely prove fatal; if procurable, rain water should always be used. Most hard-wooded plants with very fine roots resent much disturbance. If it is necessary to repot this plant, the old pot should be broken away, and the ball not disturbed by the removal of the crocks, but potted on intact.

NAMES OF FRUITS: *F. H. T.* *Cydonia japonica*, Japanese Quince.—*H. F. Z.* 1, *Emile d'Heyst*; 2, *Fondante de Malines*; 3, *Hacon's Incomparable*; 4, *Joséphine de Malines*; 5, *Belle Dubois*; 6, *Margil*.—*W. Thomas.* Apple: *Smart's Prince Arthur*. Pears: 1, *Duchesse d'Angoulême*; 2, *Beurré Hardy*.—*G. C. R.* Pear: *Hacon's Incomparable*. Apple: *Dredge's Fame*.—*Barncluth.* 1, *Nouveau Poiteau*; 2, *Brockworth Park*; 3, *Lammias*.—*Summerfield.* Pears: 1, *Beurré Herckmans*; 2, *Passe Colmar*; 3, *Fondante d'Antonne*; 4, *Beurré Bachelier*; 5, *Glou Morceau*; 6, not recognised, very small and badly grown; 7, *Doyenné d'Alençon*; 8, *Zéphirin Grégoire*. Apples: 1, *Domino*; 2, *Potts's Seedling*; 3, *Roi d'Angleterre*; 4, *Pine Golden Pippin*; 5, very small, not recognised; 6, *Alfriston*; 7, *Stirling Castle*; 8, *Cornish Aromatic*; 9, *Norfolk Beefing*; 10, *Apigros*; 11, very small and scrubby, not recognised; 12, *Cox's Pomona*; 13, *Radford Beauty*.—*W. H. S.* Pear: *Colmar d'Été*; Apple: *Rosemary Russet*.

NAMES OF PLANTS: *R. Lamb.* 1, *Thuya dolabrata*; 2, *Cupressus pisifera*; 3, *Thuya plicata*; 4, *Cupressus Lawsoniana* var. *lutea*; 5, *Thuya orientalis* var. *ericoides*; 5A, *Cupressus Lawsoniana* var.; 6, *Juniperus recurva*; 7, *Cupressus Lawsoniana*.

PEARS DISEASED: *S. and Co.* The Pears are affected by soft rot, caused by the attacks of a fungus. Probably the Pears were stored in a chamber which was insufficiently ventilated, which would favour the fungus.

SOIL BREAKING BY DYNAMITE: *T. N.* Experiments in soil-cultivation by means of explosives were carried out in the spring of 1915 by Dr. Herbert Durham, of Hampton Park. The explosive he used was cheddite; the charge was placed in a series of holes dug 3 feet deep. The surface was very evenly dug by this means, and the work was done very much more quickly than by hand labour. The cost was said to be about the same. A short account of the experiment is given in *Gard. Chron.*, March 15, 1915, p. 169.

VIOLETS DISEASED: *A. B. C.* The plants are attacked by a fungus, *Ascochyta violae*. The affected stock should be burnt and the soil sterilised. Procure healthy plants and grow them in another part of the garden; examine them from time to time, and burn any that show the least sign of disease; only in this way will you be able to stamp out the pest. When the plants are well established in the fresh soil they should be sprayed, at intervals of a fortnight, with potassium sulphide (1 oz. to 3 gallons of water).

Communications Received.—*S. L. & Co.*—*J. E.* (no enclosure)—*Vitus*—*S. & G.*—*E. M. H.*—*A. O. W.*—*H. S.*—*W. R.*—*W. K.*—*F. J.*—*G. W.*—*G. F.*—*H. W.*—*B.*—*A. W.*—*H. W.*—*A. W.*—*J. F.*—*L.*—*Scy.*—*A. O.*—*E. M.*—*S.*—*A.*—*H. M.*—*H. R.*—*D.*—*R. P.*—*B.*—*C. T.*—*R. E. A.*—*S.* & Sons—*W. C.*—*B.*

THE Gardeners' Chronicle

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ALDERMASTON COURT.

(See figs. 122, 123, and Supplementary Illustration.)

THE village of Aldermaston is situated between Reading and Newbury, in Berkshire. Aldermaston Court itself is some distance from the station, the way lying through the beautiful and interesting scenery which is characteristic of the county. The mansion is a relatively modern building; it was built in 1849 by Mr. D. Higford, and was purchased by the present owner, Mr. C. E. Keyser, from Mr. Higford's son. The estate comprises 2,500 acres, including a park of 758 acres, which was formerly a part of Windsor Forest. The most striking feature of Aldermaston Court is the beauty of its woodland scenery, and especially that part of the pleasure ground contiguous to the great park, of which it really forms a portion. At the time when we visited Aldermaston, during the past summer, the garden, like most gardens during the war, had lost much of its accustomed trimness. Nearly all the young men of the garden staff had "gone to the wars," and there remained only the veteran head, Mr. A. Galt, his son, and one journeyman. But each of the three had done his very utmost to keep things going, and, except for a little added wildness outside the dressed quarters (in the opinion of many observers adding beauty to the scene), it was difficult to realise under what difficulties the work was being done. Indeed, the seven avenues leading through the pleasure grounds, lined with beautiful old forest trees, and margined with all kinds of undergrowth, were displaying for the first time their full beauty. Nature

being permitted to hold sway. Some of these avenues are of Lime, some of Yew, and others of Holly. Here and there is seen a grand old denizen of the woods, such as a noble Beech, with a clean trunk some sixty feet high, bearing a wealth of leafy branches on its summit; old pollarded Oaks, beaten with the storms of centuries, and huge Elms, of which two—one on either side of the house—have a girth of 25 feet each, and enormous heads. A very ancient Mulberry on the lawn, compared with which the house is quite young, is still in full bearing; and two Cedars of Lebanon, raised from seed brought from Mount Lebanon by the brother-in-law of the present owner, spread their long, dark branches over the sward. Their present resting-place is not their first home, as they were raised at Warren House, Stanmore, and brought to Aldermaston about 18 years ago. Mr. Keyser is a lover of Conifers, and has planted many; there are handsome young specimens of *Cedrus atlantica*, *C. a. glauca*, *Pinus Strobus*, *Sciadopitys verticillata*, *Abies Menziesii*, and others. Interspersed with the Pines are many beautiful Acers and weeping trees of Ash and Beech. In the spring this part of the pleasure grounds is gay with countless bulbous flowers—Daffodils, Narcissus, Crocuses, and many others—and the effect must be very beautiful, especially the contrast between the light, fresh colours of the flowers and the dark, warm foliage of the Conifers. From the south front of the house an avenue of Oaks extends for a mile and a half. Near the beginning of the avenue, at the time of our visit, deer were lying on the ground, waiting, so we were told, for the foreman, who was mowing the grass, to throw them some of the clippings.

Of recent years greater variety has been introduced into the grounds by the planting of beds of shrubs. The fragrant *Choisya ternata* is a great success, and all kinds of Azaleas especially grow very well; the large number of seed pods borne by the latter showing the freedom with which they flower.

The garden has been brought right up to the house, and as a finish the walls of the house are clothed with beautiful climbers, including Wistarias, *Bignonia radicans*, the white Jasmine, Roses, *Magnolia grandiflora*, and *Ceanothus azureus*. At the west side is a raised terrace, and here are growing the pyramidally trained Yews shown in fig. 122. On the terrace itself there are twenty of these, arranged in pairs, and outside the gate are four more, making twenty-four in all. It is thought that these Yews formed a part, together with the formal beds near them (now filled with Roses and other flowers) of what was at one time a Dutch garden. There is also a central fountain, which was probably a part of the same scheme, and if a restoration were desired, it would not be difficult.

Before leaving the terrace we ought to notice the view—the colouring is exceedingly fine. Against the clear blue summer sky the golden and silver

foliage of *Acer Negundo* is thrown into fine relief, the dark background of the taller forest trees giving a very effective foil. In the foreground is a stretch of lovely bright green sward, on which are growing several fine young Cedars, their level feathery branches stretching out over the grass. On the right is another lawn, this time enlivened by circular beds of Roses, with tall weeping standard Roses at intervals. The background of this Rose garden is a belt of shrubs with a foreground of hardy border flowers.

The rock garden (shown in fig. 123 and the supplementary illustration) is only two years old, but gives the impression of having existed for a much longer period. It lies in a hollow, and at the bottom is a charming little pool, filled by a cascade which leaps and tumbles down the sides of the rock-work. The way to the bottom is down steps, in the crannies of which Alpines have established themselves; the stepping-stone shown in fig. 123 looks as though it would last until the end of time, so solid and massive does it appear. Several plants have found the surface of this stone cool and agreeable, and have encroached upon it in considerable colonies. The more to seclude this charming spot, the rock garden is surrounded by a belt of flowering shrubs, including *Spiraea arguta*, *S. Bumalda*, *S. Thunbergii*, *Buddleia Veitchii*, *Daphne mezereum* and *D. m. album*, and many other attractive species. One corner is planted entirely with Brooms, of which *Cytisus albus*, *C. Andreanus*, and *C. praecox* are the chief kinds. Down below, the rocks standing about the pool are planted with innumerable little water-loving plants. In the water itself *Nymphaeas* grow, such as *Nymphaea chromatella*, *N. albida*, *N. carnea*, and *N. rosea*; and skirting the pool, beautiful Ferns hide in the crevices, notably *Blechnum spicant*, *Polystichum* of many kinds, *Lastrea cristata*, the graceful *Osmunda gracilis*, and beautiful forms of *Scolopendrium*. By the waterside, their stems just standing in the marshy edge of the pond, *Gunnera scabra*, *Senecio clivorum*, and *Lythrum Salicaria* flourish; *Spiraeas* rise tall and graceful from the brink, and groups of stately Irises mirror themselves in the water at their feet.

The head gardener, Mr. Galt, has seen many changes during the forty-three years in which the gardens at Aldermaston Court have been under his care. Like many other successful gardeners, he is of Scottish birth and parentage; after receiving his early training in his native country he came south, and gained further experience at the Royal Agricultural College, Cirencester, and at Kew Gardens. He is a fine, upstanding man, of venerable appearance, but still hale and energetic; at the time of our visit he was in the middle of making a sowing of Endive. The pride with which he showed us his fruits was the proper gardener's pride—of the outdoor fruits, such as Loganberries, Gooseberries and Raspberries, which were ripe, nothing could be finer.

OF THE FORMS OF FRUIT TREES.

(Continued from page 305.)

II.—GENERAL PRINCIPLES.

PRESUMABLY the definite object is to obtain the largest quantity of fruit on the space that is available, given that the quality is of sufficient merit. In its simplest form this may be summed up in the provision of a sufficient supply of light and air to the fruiting organs throughout the tree. At the same time, there are certain considerations which have to be met, though it would appear that almost anything within reason (?) that is done to the tree may be accompanied or followed by the owner's satisfaction with the crop; thus there are non-pruners, long-pruners, hard-pruners; most heroic of all perhaps being the disciples of M. Lorette. But I often think that Dame Nature, with her aphides and blighting winds, rarely gets credit for her "summer-pruning." Accessibility of all parts of the tree to the gardener, as well as to light and air, is perhaps the most important of

branches have been allowed to develop. In my little orchard there are a few such trees; a high wind comes and down come the Apples. As they come down from the upper parts of the tree they crash against one branch, then against another, until they are split or scored with wounds when they finally reach the turf, useless for the store-room, though if not so roughly treated they might have been kept till April or later. The question arises, should the leader and upward shoots be conserved? Notwithstanding the strong abhorrence of the Herefordshire native of any interference with the leader, I think that the type of training to be seen in the orchards of Brittany and Normandy must be preferable, and the risk of damage to casually falling fruit much diminished. From my own trees we pick the fruit earlier (I fear sometimes prematurely) from the upper branches than from those which leave a clear fall to the ground; last year on one of five gusty days a good 25 lb. of fruit fell from a large Golden Noble tree; on the other four days similar, if not greater, quantities fell, in all at least a hundredweight of thoroughly damaged

difficulty here, and that is that cattle and horses often roam freely in our orchards. In one I visited some time ago the owner had been cutting away all the lower branches of established trees, leaving a condensed central bunch out of reach of his voracious horses. A German writer advises five primary branches at the top of the trunk; I merely mention it, as I have no personal experience. Though in Brittany, and other parts, one sees young full standards planted out without any support, with the winds we get staking is surely needed. In the grass orchard, protectors are also needed against animals; within the protector in this county the stem is often supported by an arrangement of wire and old hose-pipe to prevent damage to bark. Usually a mass of felt or similar material, forming a good nidus for bug and grub, is wrapped about the stem to prevent the tyre from cutting, but for a better fending material we are indebted to a note in *La Vie à la Campagne*; a number of ordinary bottle corks are bored diametrically near each end and threaded with twine, the collar thus formed is tied with the twine in place on the stem, and the main tyre fixed round it. If need be a similar collar may be fixed on the stake also, in which case the corks may be drilled lengthwise. The advantages in cleanliness, etc., of this form of wrapper will be sufficiently obvious. Two stakes somewhat inclined in the line of the prevailing heavy winds, one on either side of the stem at the tyre, forms a very safe support. Just at the back of my garden some young standards have lately been planted, of course, thoroughly deeply; the stakes are well supplied with rough snags, the tops have been thoughtfully bevelled off, but the sharp edges of the bevels have been carefully placed towards the stems. Lastly, the stakes are so placed that the prevailing winds blow the trees against the stakes. Comment is needless.

With regard to manuring, though it is hardly possible to be sure of results in a few years, the following procedure seems to have had a good effect upon an old standard Ribston Pippin tree, which was dying back and produced much small and deformed fruit (locally called "crinks"). A ring of turf about a yard in breadth was skimmed off all round at the limit of extent of the branches. It was noted that felted in amongst the grass roots were numbers of the fine orange-brown rootlets of the Apple. Mixed artificials were sprinkled on the bare surface, and left for a few rain showers to wash in; the surface was then lightly pricked and turned with the fork, when some further damage to the complex of fine roots could hardly be avoided, and about a month or six weeks later the turf was replaced. The intimate mixture of grass and Apple roots was one of the most striking revelations of the experiment, and the fruit now is of better quality than heretofore, though whether "propter" as well as "post" hoc is another matter. And may not the wireworm and leatherjacket be factors in the evil effect of grass round young trees?

The advantages of the tall standard would seem to be (1) it is a natural form; (2) it is serviceable for the open grass orchard; (3) if trained in the way it should grow it requires no pruning; (4) it is amenable to banding for winter and codlin moth; (5) it is especially suited for jam and vintage fruit.

On the other hand, the disadvantages would be (1) that it takes up a great deal of space; (2) the loss of fruit from windfall and wind bruising may be severe; (3) there is much waste of washes when spraying; (4) waste of time in washing and fruit picking; (5) practical impossibility of thinning fruit to produce highest grade product. In regard to the last, however, I think that it will be generally conceded that a medium-sized fruit is better than an oversize for the dessert table. *Herbert E. Durham.*

(To be continued.)



[Photograph by H. N. King.]

FIG. 122.—PYRAMIDAL YEW TREES AT ALDERMASTON COURT.
(See page 345.)

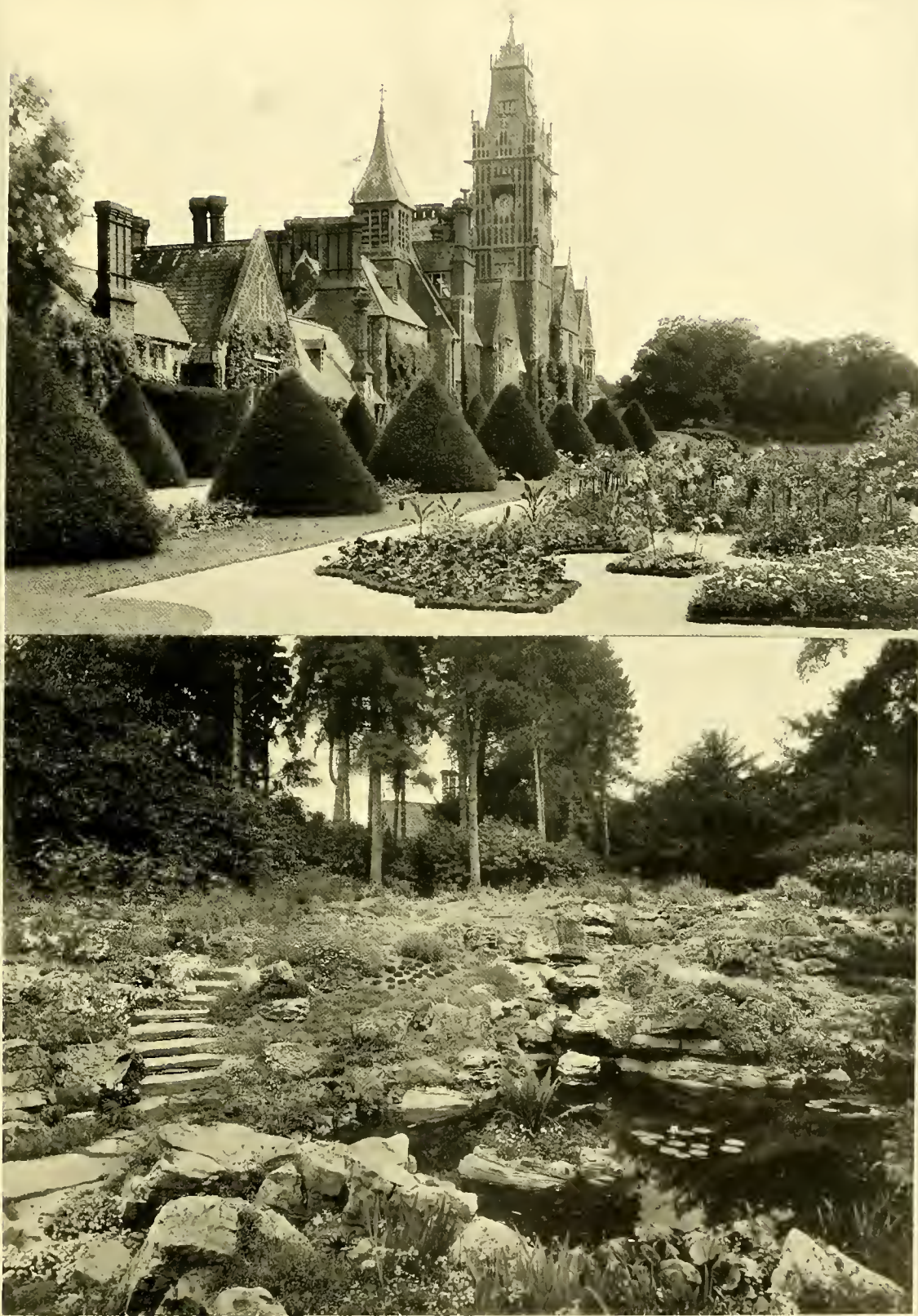
these considerations, for which purpose there appears some advantage in keeping all parts of the tree within reach without the time-wasting aid of ladder or steps. Some years ago in the East I was given to understand that the leading principle of pruning in Coffee plantations was to cut back so that the crop should be within hand reach of the coolies. Reasonable accessibility must surely lead to considerable saving of time whenever any operation is to be undertaken, be it pruning, spraying, fruit thinning, or fruit picking. However, the full-sized standard will always have its place with us.

FORMS NOT REQUIRING ARTIFICIAL SUPPORTING FRAMEWORK.—STANDARD.

The Tall Standard.—The standard tree assuredly is the form which is more neglected than any other during its early years in this country. Primary and secondary branches are allowed to grow where they will until it becomes too obvious that some are interfering with others, and the saw is brought out to let in a little air. Every now and again what might have been a useful, fruitful branch has to be sacrificed, largely because over-and-under prime

fruit was picked up, and these came mainly from the upper branches.

The French system, as recommended by a number of authors, consists in suppressing the leader and all upward internal branches, the symmetry is described about three main primary branches, each of which is branched laterally into two in successive years. The leader is cut at the required height, and the three uppermost eyes allowed to shoot; the shoots are equalised, and if need be splinting may be used to make them symmetrical. The following winter, if sufficiently grown, each is cut to 14 or 15 inches, the terminal eyes being lateral and not over and under. Next year the same length is left on each of the six secondary branches, and again lateral forking ensured; the third and fourth years the process is repeated, each segmental branch being about 14 or 15 inches long, and each fork in a horizontal direction. Should they arise, any central shoots are suppressed, and equalising methods adopted for the various boughs. From the fifth year onwards no pruning should be needed. The structural boughs are all in one layer, and if fruit should fall it meets no obstacle before reaching the grass. There is one



(Photographs by H. N. King.)

ALDERMASTON COURT, BERKSHIRE, THE RESIDENCE OF C. E. KEYSER, ESQ., M.A., J.P.

ORCHID NOTES AND CLEANINGS.

HYBRID ORCHIDS.

THE following new hybrids have flowered in the gardens of F. J. Hanbury, Esq., Brockhurst, East Grinstead:—

CYPRIPEDIUM MISS FAITH HANBURY (glauco-phyllum × niveum). A charming little flower and a model in shape. The ground colour is white, the dorsal sepal is broader than it is high and has a tinge of yellowish-green at the base, with ascending branched lines of purplish-rose colour. The broad petals bear irregular lines of the same colour. The nearly spherical lip is white with minute spotting of light purple and the staminode whitish, with green veining.

CYPRIPEDIUM MISS A. AUDREY LOCKE (Garret A. Hobart × *Troilus* var. Amy Moore). A large, showy flower of the *C. chrysotoxum* class. The whole flower has a shining surface; it is coloured bright yellow, the upper part of the dorsal sepal being pure white, the lower half bearing dark chocolate blotches. The petals have a slight veining of pale purple.

CYPRIPEDIUM OSRIC (*nitens* var. × *Memoria Jerninghamiae*). This hybrid is nearest to *C. nitens*. The dorsal sepal is densely spotted, the upper part being white; the petals and lip are tinged with dark mahogany-brown.

CYPRIPEDIUM SONIA (*callosum* × *Hitchinsiae*). The flower is heavily tinged with purple, the upper part of the dorsal sepal being white.

CYPRIPEDIUM ZOUAVE (*Harrisianum* × *bingleyense*). A flower almost entirely vinous-red, with an irregular broad white margin to the dorsal sepal; a distinct form.

CYPRIPEDIUM LORIS (*Leander* × *Actæus*). This hybrid resembles a good dark *C. nitens*. The dorsal sepal is spotted with chocolate on a green ground; the upper part is white.

CYPRIPEDIUM ARTUS (G. F. Moore × *Leeanum Clinkaherryanum*). Equal to and much like the best form of *C. Hera Euryades*, but with broader petals. The dorsal sepal is white, with large chocolate-purple blotches. The petals and lip are tinged with dark mahogany-red.

LAELIO-CATLEYA RONA (*L.-C. blechleyensis* × *C. Pittiae*).—Sepals and petals tinged and veined with pale lilac. Lip strongly three-lobed, and coloured light rose.

THE ROSARY.

SOME NEW CLIMBING AND PILLAR ROSES.

THE public undoubtedly thought it in accordance with the fitness of things that each of the two firms connected with the name of Paul should obtain a Gold Medal at the National Rose Society's summer show at Regent's Park for a Pillar Rose; the firm of Paul and Son, of Cheshunt, for their Lemon Pillar, and that of W. Paul and Son, Ltd., of Waltham Cross, for their Scarlet Climber, which had been so well shown earlier in the year at Chelsea. The latter, not being yet in commerce, I will defer noticing till another occasion, but Lemon Pillar is now on the market and is worth a few words. It is said to have been obtained from a cross between Frau Karl Druschki and Maréchal Niel, and the colour of the flower lies between these two Roses, being a pale lemon-yellow when in the bud, opening to sulphur-yellow flowers, which are sometimes nearly white. The growth is sturdy and vigorous, and plenty of branches seem to be formed, each one, as I saw the plants in June, producing at its extremity a perfectly-formed flower. The blooms were good enough for exhibition; there was scarcely a poor one, while the foliage looked healthy and strong. It should make a good Pillar up to 8 feet in height, and appears to be quite unique among Pillar Roses. It does not, I think, flower again in autumn.

Few Roses have been shown to greater ad-

vantage this year than B. R. Cant and Son's Cupid. The flowers are single and a most delicate shade of flesh colour, tinted with peach, and the fresh stems greatly add to the charm of the flower. Here, again, the plant seems to carry plenty of strong foliage and the habit of growth appears to be vigorous and upright. It is classed as a Hybrid Tea, but I rather doubt whether it will flower again in the autumn. On the other hand, at this season it produces a number of pretty, rose-coloured hips.

The introduction of these summer-flowering Hybrid Teas seems likely to raise the question whether it may not be necessary to provide for

Oriflamme (Paul and Son, 1914), obtained from Goldfinch × Mme. Eugène Réal (China), might almost be taken for a climbing sport of the China parent, the colour of the flowers being not unlike, containing, as they do, a mixture of rosy-pink and yellow, but the foliage differs.

Brainswick Charm (F. Cant, 1914) is a Wichuraiana hybrid, with good foliage and plenty of growth; the buds and centre of the open flower are orange-yellow, the outer petals of the flowers being cream-coloured. The raisers claim for this Rose that it is the nearest approach to a Perpetual-flowering Wichuraiana hybrid yet introduced. If this is substantiated



[Photograph by H. N. King.]

FIG. 123.—ALDERMASTON COURT: STEPS IN THE ROCKERY.

(See page 345.)

them a separate sub-division of the H. T. group, which is getting somewhat unwieldy. Carmine Pillar may, perhaps, be taken as the prototype of the new class, seeing that it flowers once in the season and no more.

Butterfly (Paul and Son, 1915) is described by the raisers as a hybrid of species. The plant makes a vigorous bush and may probably be equally well adapted for a hedge or pillar. The flowers are numerous, of a very attractive shade of rosy-pink, and are large for a single Rose, reaching some 3 inches in diameter.

by experience it will be a great asset. Many of our present hybrids of Wichuraiana give us a certain amount of flowers in the autumn. Paul Transon, Coquina, Dorothy Perkins and its sports, François Foucard and Mme. Alice Garnier, are examples of this, all of them giving some autumn bloom—some more, some less—in different seasons, and any step forward towards perpetual flowering is to be welcomed. Climbing Roses take a few years to become established, and until they do so it is, perhaps, premature to form a decided opinion with regard

to them; but the perpetual Wichuraiana will undoubtedly come in time, and perhaps this is the direction in which improvement may be most immediately expected.

The Rev. J. H. Pemberton is providing us with some new Roses of climbing and semi-climbing habit. In 1914 he gave us White Rambler, a plant of strong growth bearing tightly-packed bunches of white double flowers, and Winter Cheer, with semi-double crimson flowers carried more loosely than the first. The latter takes its name from its autumn flowers. This year the same raiser has brought out Queen Alexandra, which bears single flowers, sulphur-yellow in colour, with pink edges. This must not be confused with the multiflora Rose of the same name brought out by Veitch in 1901.

Mrs. Rosalie Wrinch (W. and J. Brown, 1914) is another pillar Rose which is worth notice. The flowers are single or nearly so, large in size and of a very beautiful shade of pink, with a trace of salmon in it. The foliage is a good colour and the growth satisfactory. *White Rose*.

ROSE MRS. EDWARD POWELL.

The variety Mrs. Edward Powell, which was introduced in 1911, is of the same type, both in growth and foliage, as General McArthur: the bloom is of even more brilliant colouring. The buds have more of the vivid scarlet-crimson than those of the older variety, whilst the open flowers glow with an orange shade. The beautiful foliage is practically mildew-proof. The blooms, however, are not fragrant, but fragrance is not essential in Roses used for bedding. Those who desire a brilliant effect in late autumn should plant Mrs. Edward Powell freely. *Experience*.

FLORISTS' FLOWERS.

CARNATION ENCHANTRESS.

ENCHANTRESS, which is one of the first Perpetual-flowering Carnations, is still one of the very best. The plant possesses a vigorous constitution, produces its pearly-pink blossoms with freedom, and so far shows no degeneration of form or colour. Perhaps one fault may be urged against it, but that a very insignificant one. As spring advances the flowers incline to a little paleness of colour, but as this magnificent old variety gives such an abundance of fine blooms through the very darkest months, this slight defect may be overlooked. Plants raised from cuttings should not be pinched until they are well established in 3-inch pots and 5 or 6 inches in height; they should then be pinched close to the soil, a sure preventive of the long thin growth sometimes attributed to this variety. Enchantress is a fine market sort, although the flowers are sometimes small. We grow a comprehensive collection of Perpetual-flowering Carnations, including most of the novelties, but for general usefulness and attractive appearance Enchantress is still unrivalled. The blooms have great length of stem, which enhances their value for use as cut flowers; moreover, the petals have a beautiful appearance by artificial light. *Ralph E. Arnold*.

PLANT NOTE.

HYBRID CEROPEGIA.

I ENCLOSE blooms of a hybrid *Ceropegia* (*C. Sandersoni* × *C. Monteiroae*), from a plant of twelve seedlings raised here this spring.

Ceropegia Sandersoni, the seed-bearing parent, has flowers $2\frac{1}{2}$ inches long by $1\frac{1}{2}$ inch broad at the top of the umbrella-shaped cap. In colour it is a light green, spotted and blotched all over with a darker shade. The species is one of the most beautiful of the genus.

C. Monteiroae is much smaller, the flower

being only $1\frac{1}{2}$ inch long by $\frac{1}{2}$ inch at its widest part. In shape it is entirely different, the cap being absent and its place taken by five segments of the corolla, which give it a conical appearance. The tube of this species is a greenish-white, blotched with purplish-brown, while the interior is green, with a band of white surmounted by a blotch of dark brown on all the segments.

The hybrid is intermediate in character; the manner of growth and its flowers are quite distinct from either of its parents. The corolla tube is more heavily blotched than in *C. Monteiroae*, and the flower opens in much the same manner, but instead of being conical has a square appearance, the top showing the rudiments of the *C. Sandersoni* cap. The interior colouring reproduces the characteristic markings of the male parent, but much less distinctly. The parents grew side by side at Nymans, Crawley, Sussex, whence I obtained the seed as *C. Sandersoni*. The flowers were probably pollinated by ants, which appear to be very fond of entering them. *H. F. Comber, Colesbourne Park Gardens, Cheltenham*.

NOTICES OF BOOKS.

LANDSCAPE GARDENING.

MR. SAMUEL PARSONS is probably the best-known landscape expert living in America, and his professional opinions will be studied with the interest and respect due to his reputation. *The Art of Landscape Architecture* is a work (to quote the author) designed "to set forth the underlying principles of the practice of landscape gardening and to sustain the exposition of these principles by the citation of passages from at least one hundred well-recognised authorities."

The theories of Mr. Parsons are in perfect accord with English feeling, and his arguments are based on texts taken chiefly from writers familiar to British students of the art of landscape development. Some of the best precepts contained in the book are from the pen of Prince Pückler, whose works are valuable alike for their suggestiveness and clear expression.

Wordiness is the bane of landscape literature, and it may be suspected from the opening reference that Mr. Parsons's book is not entirely free from this defect. The author writes wisely, however, and makes his points sooner or later, so that one always feels in the company of a pleasant spirit and safe guide. Mr. Parsons elaborates at length some ideas which may seem a little obvious to us, but he naturally knows the needs of a wider public than exists in this country.

It is doubtful if the author is quite as familiar with our most famous gardens as he is with the technical literature of this country. His references in the former respect are scarcely representative or up to date.

I do not endorse his suggestion that less interest is taken nowadays in the embellishment of country estates than was the case a century ago, although the greater attention now paid to the ground near the house may be somewhat at the expense of a broader outlook.

Mr. Parsons writes with evident sincerity and much practical knowledge upon every essential issue. He does not claim to present new points of view, but he holds the interest even of a reader who anticipates his conclusions. No author could ask more.

The book deserves, and will find, a permanent place among authoritative writings on the subject of landscape gardening. Its value is increased by several illustrations, among which, however, we should have been interested to find more examples of the author's own work. *Edward White*.

* *The Art of Landscape Architecture: Its Development and Its Application to Modern Landscape Gardening.* By Samuel Parsons. (G. P. Putnam's Sons.) Price \$3.50 net.



FRUITS UNDER GLASS.

By JOHN HIGGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

EARLY POT VINES.—As soon as the Vines commence to grow, increase the temperature to 60° at night and 70° during the day. With the temperature rising to about 70°, the house should be ventilated very carefully, but only for a short time during the middle of the day. Sufficient atmospheric moisture may be promoted by damping the borders and paths without having recourse to spraying the foliage, which is not always advisable during cold weather. Remove surplus shoots at an early stage of their development, deferring the final disbudding until it can be ascertained which shoots give promise of the best bunches. The number of bunches to leave on a rod must be determined by the strength of the plants; it will be better to be on the safe side and have only as many as will finish properly without overtaxing the Vines. Give strict attention to the work of stopping and regulating the shoots. The lateral growths below the bunch should be rubbed out entirely, whilst those beyond the bunch should be pinched at the first leaf. Watering must be done with great care, and the water should be made tepid. Feeding the roots should be deferred until the berries are set.

EARLY PEACHES.—Trees in pots intended to fruit early should be plunged in a bed of fermenting materials suitably prepared. The hot-bed will for the present supply the necessary warmth without resorting to fire-heat, although in very cold weather it may be necessary to use a little fire-heat to maintain the temperature at from 45° to 50°. Guard against sudden rises in the temperature of the house when the weather is warm, for this would cause the trees to grow too freely, and haste in forcing is not desirable at this stage. Spray the trees overhead on fine mornings with clear water of about the same temperature as the house.

SUCCESSIONAL HOUSES.—Later houses that will be closed for starting the trees towards the end of the present month should be cleansed, and made ready at once. Meantime, afford the trees plenty of ventilation, for then they will respond more readily to gentle forcing when the house is closed. Houses containing still later trees should be cleansed, if possible, before the New Year, and alterations to the borders completed as soon as possible. Examine the borders frequently to see if the soil needs moisture, for watering the roots must not be neglected. Take the opportunity dry weather affords to collect the soil and other materials necessary for top-dressing the borders, and store them in a rainproof shed, where they will be conveniently at hand when wanted.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

THE PEACH BORDER.—The soil for Peach borders should be rich, mellow loam, such as is found in the top spit from an open paddock. Retain all the turf and fibrous matter, which will become decomposed in the process of storing and turning, and furnish the plants with valuable food. If special soil of this nature cannot be obtained, use the next best that is available. If too light in texture, add a quantity of stronger loam or the scourings of ditches, which have been exposed to the air for a sufficient time to sweeten. Mix the materials together, and then, if the compost is not sufficiently strong, add rich garden soil to it. The more simple the preparation the better will it be. If, on the contrary, the turf is too heavy in texture, add clean, gritty road sand and decayed vegetable mould to lighten it. Do not use excessively rich compost. The physical condition of the soil is as important as its chemical

constitution, for if the texture is right, air and rain will bring the plant foods into service for the roots. Turves collected by the sides of roads and loamy ditches, if chopped up and well rotted, form an excellent rooting medium for most kinds of fruit trees, but they require a preparation of several months, including frequent turning to expose them to the influence of the air. The more care that is taken in preparing the borders the less trouble will they entail in the future, and on this success largely depends. For Peaches and kindred fruits a light, but naturally rich, loamy soil is best, as the use of manure, if not thoroughly decomposed, might cause the trees to make strong, ill-ripened shoots and often favours disease. In a light, rich loam, without much or any manure, the trees make growths of a medium size, and such growth ripens well in average seasons. The depth of soil in a Peach border need not be greater than from 2½ to 3 feet; but this will largely depend on the nature of the substratum. A retentive, damp soil is most unsuitable to Peaches, and if the border cannot be made sufficiently dry on the flat, it will be better to raise it considerably above the level of the surrounding ground. The Peach is almost universally planted against south walls, and if these are provided with glass copings, so much the better. Peaches in some gardens thrive admirably, continuing healthy and productive for many years; it will be found in the majority of cases that much, or most, of the success depends on the soil and climate, rather than any particular system of management. The experience of many years, and the misfortune of having, in some cases, an unfavourable soil, lead me to this conclusion.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

MUSHROOMS.—Proceed with the making of new beds as quickly as the material can be collected and prepared. Mushrooms may be grown in a cellar or shed which is uninfluenced by external temperatures. Maintain a uniform temperature of 50° to 55°. Spawn the beds when the temperature by fermentation is 80°, and when the heat has declined to 75° cover the surface with one inch of new loam, and make the soil firm by ramming. A covering of clean straw placed over the bed will prevent the heat from falling too low, and reduce the need of watering. Beds which were spawned in September should now be producing a full crop. See that the atmosphere is not unduly dry, or the Mushrooms will be of inferior quality. Examine the beds carefully to see if moisture is necessary, and use soft water through a fine rose. Keep out the cold air as much as possible by covering the door and side ventilators with mats, but use the top ventilators to keep the atmosphere sweet.

PEAS IN POTS.—A few dishes of early Peas may easily be produced, provided suitable pots and houses are available. Pots 8 inches or 10 inches in diameter are the most suitable size, and should be clean and well crocked. The soil may consist of three parts rich loam and one part decayed horse-droppings, which must be thoroughly broken up and mixed with the loam; add a 6-inch potful of bone meal to every barrow-load of the compost. The pots should be half filled with the rougher portions of the compost, which should be made moderately firm. A surplus number of seeds should be placed in each pot to allow for the removal of the weaker plants. Fire-heat will not be necessary, except to keep the house free from frost, as the cooler the treatment the more robust will the plants grow. When the haulm is a few inches high the roots may be top-dressed with rich compost made firm. Early Giant, Early Morn and Discovery are amongst the best varieties for growing in pots; all three sorts are of excellent quality and moderate height.

TURNIPS.—All roots which have grown to their full size should be lifted and stored in a well-ventilated shed, where they can be kept quite dry and cool. Roots which were lifted a month ago should be examined and shoots removed, or they will soon become unfit for use.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

SEED-SOWING.—The seed-vessels on winter-flowering *Cypripediums* usually mature at this period, and the seed should be sown at once, as I find that germination takes place more readily now than in the spring. *Cypripediums* that do not require potting for some months should be chosen as seed-pans, and the surface must be free from moss and all other foreign growth. Sprinkle the seed evenly and thinly on the surface, and water the host plants carefully at all times, for the seeds must never be allowed to become dry. Seeds of *Cattleya* and *Laelio-Cattleya* may also be sown on prepared pots; but it is advisable to wait until the New Year before sowing this Orchid on a large scale.

EULOPHIELLA ELIZABETHAE.—The genus *Eulophiella* contains but two species, and *E. Elizabethae* is the more commonly grown, although the rare *E. Peetersiana* is occasionally found in collections. Both are strongly-growing species and require a moderate amount of root room, as the pseudo-bulbs are produced at rather lengthy intervals on the rhizome. For this reason long Teak-wood baskets are the best receptacles, and they should be partly filled with material for drainage. The rooting medium should consist of a mixture of *Osmunda*-fibre and *Sphagnum*-moss; the last layer of the compost should be principally *Sphagnum*-moss. Both plants grow best in a warm house, but when at rest they should be placed in the cooler *Cattleya* house. At no time must the roots be excessively dry.

CATTELEYA.—*C. labiata* and *C. Bowringiana* are valuable plants for flowering at this season, and several fine hybrids are also in bloom. *C. labiata* is one of the parents of *C. Fabia*, *C. Portia*, *C. Peetersii*, *Laelio-Cattleya Bella* and *L.-C. Lucasiana*. Hybrids of *C. Bowringiana* include *C. Mantinii*, *C. Mrs. J. W. Whiteley*, *C. Browniae*, *C. Wendlandiana*, *C. Epicasta*, *Laelio-Cattleya Ilione* and *C. Portia superba*. As these plants pass out of flower, cut off the old spike close to the pseudo-bulb and remove the sheath. This is very important, especially where the atmosphere is kept rather moist, because the accumulation of moisture at the apex of the pseudo-bulb often sets up decay. If any plants are affected in this way the diseased parts should be cut away, and the cut surface sprinkled with lime or powdered charcoal. The atmosphere should be kept drier, and the roots watered only sufficiently to keep the pseudo-bulbs plump and rigid. If necessary the plants may be repotted, but with the majority this work is best deferred until the spring, when the new growth will be well advanced. Those that are repotted at this season must be subsequently watered very carefully; while all *Cattleyas* that are at rest should be afforded water sparingly.

PLANTS UNDER GLASS.

By F. JORON, Gardener to Lady NUBERTHOLME, Warter Priory, Yorkshire.

PRIMULA SINENSIS.—Chinese *Primulas* raised from seed sown early are approaching their flowering stage. If a night temperature of 45° or not much lower is maintained, there will be little danger of the leaf-stalks damping. Arrange the plants close to the roof-glass, and especially if the night temperature cannot be maintained at the degree stated, for a light, dry situation is the next best safeguard against damping. Late plants intended for furnishing a succession of bloom until the spring should be grown in a little warmer atmosphere than hitherto during the next two months. The more light the plants receive the stronger will they grow and the better will they flower.

DOUBLE PRIMULA.—Few other small plants produce such a long succession of bloom as the old Double White *Primula*. Little can be done with this plant in a temperature lower than 45° to 50°, for the leaves are prone to damping, and the flowers will not develop fast enough. Weak manure water may be used for watering once a week, and it should be applied early in the day to permit of the foliage becoming dry again whilst the ventilators are open. A little

fire-heat should always be used, and especially early in the day, reducing the amount as may be necessary towards evening.

CHRYSANTHEMUMS.—As these plants pass out of flower, select healthy specimens for stock purposes. Grow the plants in a light position in a cold pit or cool fruit-house to obtain sturdy shoots later for cuttings. It is time to insert cuttings of plants for obtaining large blooms, but January will be early enough to propagate the general collection of bush plants. In selecting shoots for cuttings, choose those that are sturdy and short-jointed, as weak ones seldom give satisfactory plants. They will root in a cool frost-free pit, but they must be kept free from rust and insect pests.

BEGONIAS.—The different types of winter-flowering *Begonias* are now at their best stage. Do not neglect the plants as they pass out of bloom, and never permit the roots to become completely dry. The same special attention should be paid to stock plants after flowering as before. Grow them in a light position in a warm house and withhold water gradually until they go to rest. Although varieties of the *Gloire de Lorraine* type are not so difficult to cultivate as the newer winter-flowering varieties, the plants required for stock purposes must not be neglected as they pass out of flower. Shorten the shoots, and grow the plants in a warm house until growths develop from the base; such basal growths make the best cuttings.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq., Duffryn Gardens, near Cardiff, South Wales.

PROTECTING PLANTS.—On the morning of the 17th inst. we registered 13° of frost, an unusual amount for this locality at so early a date. A few subjects were slightly injured, but climbers on walls usually classed as tender were unharmed. In view of greater cold, and especially in colder districts, preparations should be made for protecting such plants as *Abutilon vitaeifolium*, *Cassia corymbosa*, *Lapageria rosea*, *Aloysia citrodora*, *Embothrium coccineum* and *Clanthus*. Do not use a permanent covering that would exclude the light for a long time. Spruce branches fastened among the plants will afford suitable protection for some time to come, but mats should be in readiness as an additional covering in the case of prolonged, severe frost. A mound of coal ashes should be placed around the base of the stem to protect the collar. Plants such as *Olearia insignis*, with leaves and stems covered with tomentum, are especially liable to injury when frost immediately follows rain. Squares of glass or handlights should therefore be securely placed in position to keep the plants dry. *Androsaces* may be similarly protected. Protect newly-planted dwarf *Roses* and all Teas by working among the growths some dry Bracken; or, failing this, the dry stems of *Michaelmas Daisies*. *Gunneras* should be well covered with the same material mixed with leaves. *Romneya Coulteri* and *Erythrina Cristagalli* growing against south walls may have their growths shortened and the roots well covered with litter or coal ashes. Both these plants will send up fresh shoots from the base in spring. A small mound of rough coal ashes will also protect *Anchusas*, *Hollyhocks*, *Salvia Tenori* and *Thalictrum dipterocarpum*. This material also acts as a deterrent to slugs, but crushed coke breeze, as I have previously stated, is the best material to use for slugs, and should be placed around such plants as *Delphiniums*, *Phloxes* and *Gypsophila*.

COLLECTING FALLEN LEAVES.—Leaves fallen from deciduous trees should be collected and stored. A few loads may generally be obtained from where they have drifted, in parks or skirting woodlands. Rotted Oak and Beech leaves provide good material for potting purposes; whilst leaves of other trees will be useful for mixing with strawy manure in the making of hot-beds. Should there be a shortage of leaf-mould it is a good plan to mix a stack now with alternate layers of turf that was cut some months ago. The materials will decay sufficiently by next spring, when the heap will provide a suitable compost for the potting of most bedding plants.

EDITORIAL NOTICE.

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

Editors and Publisher. — Our Correspondents would oblige by delaying in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, DECEMBER 6.—National Dahlia Soc. annual meet. at Hotel Windsor, Westminster.

TUESDAY, DECEMBER 7.—Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "The Wisley Rock Garden," by Mr. A. Sarsons). Scottish Hort. Assoc. meet.

WEDNESDAY, DECEMBER 8.—Perpetual-Flowering Carnation Soc. Sh. at Roy. Hort. Soc. Hall. Nat. Chrys. Soc. Floral Com. meet.

THURSDAY, DECEMBER 9.—E.G.A. (Watford Branch) meet. Lecture by Mr. C. Fletcher. B.G.A. (Central London Branch) meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 40.9.

ACTUAL TEMPERATURE:—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, December 2 (10 a.m.): Bar. 29.6. Temp. 45°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY.—Rose Trees, Shrubs, Perennials, Bulbs, etc., at Stevens's Rooms, 38, King Street, Covent Garden.

MONDAY.—Dutch Bulbs at 11, Roses at 1.50, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY.—Nursery Stock at Woodlands Nurseries, Maresfield, near Uckfield, by Protheroe & Morris, at 12.

WEDNESDAY.—Dutch Bulbs at 11, Miscellaneous Bulbs at 12, Herbaceous Plants, Shrubs and Fruit Trees at 1.50, Japanese Lilies at 3, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY.—Special Sale of Roses at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY.—Dutch Bulbs at 11, Border Plants, Shrubs, Roses and Fruit Trees at 1.50, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

A Tax on Visitors to Kew Gardens.

We have received information that the President of the Board of Agriculture has ordered, or is about to order, that visitors to Kew Gardens after the first of January shall be charged for admission. Rumour has it that on certain days (Tuesdays and Fridays) the Gardens are to be reserved for students, artists, and photographers, who will pay an admission fee of 6d., and that on other days the public is to be admitted at a charge of 2d. before noon and 1d. after noon. If this report be true, the public has a right to ask to be informed of the circumstances which have led to these decisions. All who know the hold which the Royal Gardens have upon the people of this country will

deplore a decision which is bound to curtail the use and enjoyment of the Gardens among that section of the community that needs them most. Inasmuch as the proposed charge is small, it is to the many more vexatious than serious; but small though it be, it is bound to discriminate and to keep away those to whom even pennies are of importance. Moreover, the public has no assurance that those responsible for this ill-advised innovation may not presently raise the prices of admission.

It is well known to those who are in contact with horticulture that Kew exercises a wonderful educational effect on a people that, for lack of opportunity, is none too appreciative of the beauty and charm of natural objects. Assuredly, if this tax be persisted in, this educational influence will be curtailed and the community will suffer. We feel it our duty, therefore, to ask whether this attempt at taxation of the public by a Department is a part of a general scheme of economy about to be put in practice by the Board of Agriculture, and if so, what are the other modes of economy which the Board proposes to practise? Piecemeal economy under the uninformed pressure of the Treasury is bound to be injudicious. Of this we have already an example in the withdrawal of grants for horticultural education. Such a withdrawal—already an accomplished fact—should never have been sanctioned except as a last resource and after all the more obvious methods of economy had been practised. We know that these obvious methods of economy have not yet been practised; but we shall look for their inclusion in any scheme which contains the unfortunate proposal to charge for admission to Kew. Nor is there need to enumerate them; for they are patent to all who have knowledge of the expenditure and organisation of our Government Departments. Of such economies, and apart from reduction of personnel, we may suggest two, namely, a small charge for the leaflets which are at present distributed broadcast without charge, and the suspension for the period of the war of the Journal of the Board or its curtailment, to include only information of urgent importance to the agricultural community. Another question which must be asked before those who care for horticulture can acquiesce in this proposal is, what is the estimate of revenue to be derived from the penny and twopenny tax? Is the Board of Agriculture—the trustee of Kew on behalf of the people—prepared to see the Gardens boycotted by the poor and become an enclosure only for the well-to-do?

The more we contemplate it, the less does the proposal appear to be dictated by wisdom. We shall learn, probably, in due course that Kew itself has been called upon to reduce its expenditure, and doubtless it is possible for it to effect some economies; but we warn the Board that an economy obtained at the expense of efficiency means, in the case of an Imperial institution such as Kew, a permanent reduction of the resources of the

Empire. To the dispassionate and informed judgment it would seem less disastrous and far more economical if the Board itself closed down all but its routine activities, rather than impose economies on Kew that would cripple its resources.

We are apprehensive that economy is to be preached by officialdom and practised by the laity. For this reason also we claim, on behalf of horticulture, information on the scheme of economies contemplated by the Board of Agriculture.

If it can be shown that, after all-round reductions in the expense of administration have been made, further retrenchment is necessary, we must acquiesce, perforce, in this twopenny economy at Kew; but unless this can be shown we shall do all in our power to oppose this money-changing in the Temple of Horticulture.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committee will be held on Tuesday, the 7th inst., in the Society's Hall, Vincent Square, Westminster, at 3 p.m. Mr. A. SARSONS will deliver an address on "The Wisley Rock Garden."

PERPETUAL-FLOWERING CARNATION SOCIETY'S EXHIBITION.—The autumn exhibition of the above Society will take place at the R.H.S. Hall, Vincent Square, on Wednesday, the 8th inst. A conference will be held during the afternoon, and at the ladies' stall flowers and plants will be sold for the benefit of the R.H.S. War Horticultural Relief Fund. Wounded soldiers and members of Overseas Contingents will be admitted free to the exhibition.

NATIONAL AURICULA SOCIETY (NORTHERN SECTION).—The annual report of the Committee of the National Auricula Society (Northern Section) refers in detail to the 42nd exhibition, held on May 1, 1915, in the Coal Exchange, Manchester. Although the show was early for the season, it was a good one; there was plenty of competition, and the usual feeling of good fellowship was again happily present. The number of exhibits of Show Auriculas was 224, compared with 191 in 1914 and 307 in 1913; whilst Alpines numbered 231, being 62 fewer than in 1913 and 1914. It is proposed to hold the annual show in 1916 at Altrincham. Suggestions have been made to include a class for single yellow show selfs, and another for three show selfs, distinct, any variety. The report contains the calendar of work month by month, published by the National Auricula Society (Southern Section), and a biography of SAMUEL BARLOW by his nephew, Mr. JAMES W. BENTLEY.

NATIONAL DAHLIA SOCIETY.—The annual general meeting of the National Dahlia Society will be held at the Hotel Windsor on the 6th inst. at 4 p.m.

EDINBURGH CHRYSANTHEMUM SHOW.—The gate receipts for the two days of the Edinburgh Chrysanthemum Show amounted to £185 11s., as compared with £472 13s. 6d. last year, when the exhibition was held on three days.

EX-BAILIE ALSTON.—The late Councillor ALSTON, Glasgow, whose death was announced the other day, took an active part in the operations of Glasgow Town Council in connection with afforestation. As chairman of the Glasgow Distress Committee he took a keen interest in the operations of the Palacerig Labour Colony. Lately, as Convener of the Ardgill Estates Committee of the Glasgow Town Council, he strongly advocated and assisted in carry-

ing out the important afforestation scheme drawn up by Mr. JAMES WHITTON, the Superintendent of Parks. He was fifty-nine years of age.

GIFT OF A PARK TO BOLTON.—Sir WILLIAM LEVER has presented to Bolton, his native town, a park site comprising sixty-eight acres. The town is already indebted to him for one park, which is known as Lever Park, and includes a beautiful eighteenth-century building, Rivington Hall.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting of the Surveyors' Institution will be held in the lecture hall of the Institution on Monday, the 13th inst., when a paper, entitled "English Timber During and After the War," will be read by Mr. M. C. DUCHESNE (Fellow), Hon. Secretary of the English Forestry Association. The chair will be taken at 4 p.m. At 3 p.m. the Rt. Hon. the Earl of SELBORNE, K.G., will open an exhibition in the Institution Buildings, organised by the English Forestry Association, illustrative of Mr. DUCHESNE's paper.

FLOWERS IN SEASON.—Messrs. STUART LOW and Co., of Bush Hill Park, have sent us blooms of two new Carnations, named Alice and Mrs. Mackay Edgar; they are of closely similar colour, viz., a delicate pink. Alice was raised by Mr. PETER FISHER, the originator of Enchantress and many other fine varieties. Messrs. Low state that both the varieties are very freely flowering, producing more blooms even than May Day. Alice received the R.H.S. Award of Merit on October 12, 1915.

WAR ITEMS.—Mr. JAMES MASTERTON, gardener, Baldernock House, Milngavie, has received news that his son, Private JAS. MASTERTON, of the Scottish Horse, has been killed at the Dardanelles.

—Major Sir SCHOMBERG McDONNELL, whose death in France from wounds is reported, was for many years Secretary to the Office of Works, and in this capacity exercised much control over the Royal Parks in London.

—At the Norwich Show last week the Norfolk and Norwich Horticultural Society had a magnificent stall, where the members sold country produce on behalf of the Norwich War Depôts Work for Wounded Soldiers. King George sent gifts of game, fruit, and flowers.

—Further to our note on p. 337 of our issue for November 27, it is interesting to learn that the British Red Cross Society has for some time been receiving gifts of bulbs for distribution to their convalescent camps in France from Messrs. J. CARTER and Co., of Raynes Park, who have also sent growing bulbs to several of the military hospitals.

AWARDS AT THE PANAMA PACIFIC EXPOSITION.—Messrs. SUTTON and SONS have been awarded the Medal of Honour for an exhibit of garden flowering annuals in the beds and borders of the exhibition grounds. Their display of seeds, with models of vegetables and agricultural roots, in the Pavilion of the Palace of Horticulture, has been awarded a Gold Medal, as has also an exhibit of the firm's intermediate strains of Antirrhinum. Other honours have been given to numbers of their floral specialities.

SUMMER SHADING FOR ZEPPELIN PROTECTION.—Readers may be interested to learn that the shading ordinarily used for painting the roofs of greenhouses during the summer can very effectively be used for screening street lamps and other lights in conformity with the current regulations against excessive lighting. The best shadings are not affected by rain, and can only be washed off with hot water, so that one application is sufficient.

PLANTS WHICH STUPEFY FISH.—According to the report (1915) of the Agricultural Depart-

ment, Dominica, the fruits of *Diospyros Ebenaster*, Retz, are used for stupefying fish. For this purpose they are reduced to pulp, placed in sacks or baskets, and submerged in pools or rivers. Another plant used for a similar purpose is *Clibadium Vargassi*, DC. In this case the leaves and stems are used, as also are those of *Neurolaena lobata*, R. Br.

THE SETTING OF GRAPES.—Bad setting of such varieties of Grape as Alnwick Seedling, Duke of Buccleuch, Mrs. Pince and Black and White Muscat, is attributed by Mr. W. J. MIDDLEBROCKE (*Journal of the Board of Agriculture*, XXII., No. 5, August, 1915), to the presence of drops of nectar on the stigmas. To remove this liquid, and so ensure good setting, he recommends the syringing of the bunches early in the day with clean, warm water at a temperature of 50° F. above that of the house.

ASSIMILATION OF ATMOSPHERIC NITROGEN.—The most recent research on the subject, that of Dr. E. MAMELI and Professor G. POLLACCI, shows that not only the Leguminosae, but many other flowering plants are able to make use of atmospheric nitrogen. Among flowering plants for which they claim this power are *Cucurbita Pepo*, *Acer Negundo*, *Polygonum fagopyrum*, and they also ascribe it to such "Water-Ferns" as *Azolla caroliniana* and *Salvinia natans*. FRANK

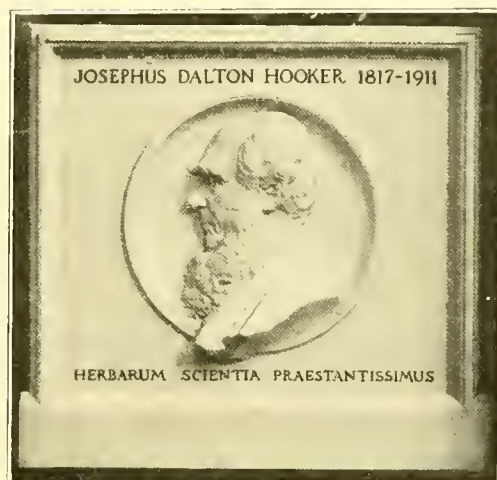


FIG. 124.—TABLET TO THE MEMORY OF SIR JOSEPH HOOKER IN WESTMINSTER ABBEY.

long ago maintained the view that the power of assimilation of free nitrogen belongs to all green plants, and this view receives support from these recent researches.

THE RECRUITMENT OF INDISPENSABLES.—It does not require much prescience to predict that, unless some organisation is established to deal with the subject, the horticultural trade may suffer seriously by the recruitment of men whose services are indispensable to the conduct of its business. All are willing to make whatever sacrifice the times demand, and in our experience it is often the most competent who are the readiest to enlist. The staffs of many horticultural businesses have already been reduced; nurserymen and market growers are beginning to suffer from the shortage of labour. The line between indispensables and dispensables is difficult to draw, and it does not seem reasonable to place the onus of drawing it on local tribunals without providing these tribunals with some assistance in reaching in each several case a just decision. We suggest, therefore, that the horticultural traders should meet—in the patriotic and businesslike spirit which characterised them when they met recently to discuss the change in postal rates—and discuss this subject, the importance of which they all recognise. If they conclude from their deliberations that organisation is required

to resolve the knotty problems of degrees of indispensableness, they might well send a deputation to the Board of Agriculture and ask the Horticultural Branch to lend them assistance in distinguishing, for the benefit of local tribunals, between those members of their staffs who should be taken and those who should be left. The general Press of the country has for the most part failed to guide us in the difficult and simultaneous tasks of carrying on our work and carrying on the war. They cried, "Business as usual," and later denounced their own cry. Surely, the right motto, first and last and all the time, is "Duty as usual." Horticulturists, at all events, have acted up to that motto. They do not want to ask the assistance of the Horticultural Branch of the Board of Agriculture in order to evade, but in order to fulfil, their duty to the State. That duty is twofold, and the two aspects thereof are not easy of adjustment. On the one hand they must perform their duties as citizens of the Empire, on the other they must maintain the great and indispensable trade of horticulture. To effect that compromise something more is required than the rough and, perforce, imperfectly informed judgment of local tribunals. It is here that the department of State established for the purpose of advancing horticulture might intervene with authority and effect.

MEMORIAL TABLET TO SIR JOSEPH HOOKER.—The tablet to the memory of Sir JOSEPH HOOKER, illustrated in fig. 124, finds a place in Westminster Abbey near the foot of the effigy of JOHN THYNNE, a canon and sub-dean of Westminster. The tablet depicts the great botanist in profile, and presents him as he appeared in his mature vigour. Over the tomb of the late canon and sub-dean are a row of medallions of great scientific men. They are DARWIN, WALLACE, LISTER, ADAMS and STOKES. It is interesting to observe that four of the five achieved distinction in the domain of biology. Of the contributions of DARWIN, WALLACE and LISTER there is nothing new to say. GEORGE GABRIEL STOKES, though primarily a physicist, also made important contributions to biology in applying the spectroscope to the investigations of the composition of chlorophyll.

TRADE WITH SOUTH AFRICA.—According to the *Board of Trade Journal*, a Johannesburg agent wishes to obtain agencies of United Kingdom manufacturers of garden implements. United Kingdom manufacturers may obtain the name and address of the inquirer on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, London, E.C. The reference number (C.I.B. 53,393) should be quoted.

RUSSIA AND CHEMICAL FERTILISERS.—The use of chemical fertilisers for agricultural purposes is comparatively little practised in Russia, partly owing to the primitive and un-intensive methods of agriculture and partly owing to the difficulty of obtaining an adequate supply of manure. Artificial manure sells at a price which renders it inaccessible to a large number of farmers. The principal kind of chemical fertiliser in use in Russia is phosphates, which are imported in considerable quantities from Western Europe. Although there are in Russia various phosphate deposits, up to the present they have been little exploited, and the bulk of the quantity used has been imported from abroad. Factories producing phosphates hardly exist in the interior of Russia, and until this state of affairs is changed the present high prices for imported fertilisers must necessarily continue to be paid. Nevertheless, experiments in the use of such fertilisers have proved so satisfactory that recently their use has considerably developed. Of the total supply up to the present, about 79 per cent. has come

from abroad and the remainder from Russian manufacturers. The greater part of the fertilisers manufactured in Russia came from factories in Poland, which in consequence of the war were obliged to decrease their output. In addition to this, the extensive requisitions of cattle and horses for army purposes have still further reduced the supplies of natural manure. Sulphate of ammonia and "blood meal," which constituted articles of export from Russia before the war, will now have to be used for home consumption. The alkaline salts which used to be imported from Germany to the extent of over 1,607,000 cwt. might to some degree be replaced by ashes, which at present are left unused. They are produced at present only by some small factories which make potash from Sunflower seeds and Tobacco, exclusively for foreign export. The importance of alkali for so many industries, which in the past have depended upon imports of this material from Germany, renders the question of the production of this article in Russia a matter worthy of the most serious consideration. Experiments made by the Moscow Agricultural Institute have shown the possibility of producing alkaline salts of high percentage from the products of the Crimean salt industry. There are also deposits in the districts of Iletzkaya Zashchita and the borders of the White Sea, containing a mineral yielding alkali and phosphorus, which have not yet been touched. Further progress has been made with the exploitation of alkaline deposits near Kalusha, in Russian Galicia. Phosphate manures are of first-rate importance for Russia, and out of the total quantity of artificial manures (13,000,000 cwt.) used during the past year, about 11,000,000 cwt. were of this kind. Of these about 6,000,000 cwt. were superphosphates and about 5,000,000 cwt. basic slag. The home production of basic slag is centred in three factories in Sartan, Taganrog, and Kertch, with an annual output of 1,250,000 cwt.; that of superphosphates (seven factories) has reached a little over 2,000,000 cwt. This backwardness of the industry is explained by the expense of the installation of factory plants, due to the high tariff on machinery, apparatus, acid-resisting bricks, and sacks. Another circumstance limiting the development of the industry is the distribution of the factories, which are all either in Poland or near the sea, working on foreign raw material from Africa, America, Sweden, and Spain. Since 1908 a geological survey carried out by the Moscow Agricultural Institute has revealed the existence of phosphate deposits in the surveyed districts to an estimated amount of nearly 291,000,000 tons. The Ministry of Agriculture has also attempted to foster the development of the superphosphate industry in the central and eastern regions and to interest the chemical manufacturers along the Volga in its possibilities. *The Board of Trade Journal.*

AGRICULTURE AND RECRUITING.

In response to requests from readers we have enquired of the Board of Agriculture as to the position of gardeners with respect to enlistment under Lord Derby's scheme, and have received the following reply, in which attention is drawn particularly by the Board to paragraph 6.

1. The President of the Board of Agriculture and Fisheries desires to draw attention to the terms of the circular which has been issued to local authorities by the President of the Local Government Board, so far as it relates to agriculture.

Local authorities have been invited to do everything in their power to assist the work of the local recruiting authorities and to constitute committees to deal with questions arising in connection with the new recruiting arrangements.

These committees are to be styled "local tribunals," and a Central Appeal Tribunal has been appointed by the Government, with Lord Sydenham as chairman, to deal with cases referred to them by the local tribunals.

2. It has been arranged by the War Office that a man who wishes to join the Army may elect either to join the Forces forthwith or to be placed in his group; that is, (a) he may be enlisted for immediate service with the Colours, or (b) he may be attested, placed in the Reserve (Section B), grouped, and returned to his civil occupation until his group is called up for service.

A man accepted on the latter conditions will be entitled as a soldier in the Reserve to wear a khaki armlet, which will be given to him by the military authorities.

There are forty-six groups, twenty-three for single men (including widowers without children dependent upon them), each year of age constituting a separate group, and twenty-three similar groups for married men; the first group consisting of single men aged eighteen years, the forty-sixth of married men aged forty. Men married since August 15, 1915, the date of registration, will be treated as single men. It is proposed to call up the groups for military service in the numerical order of the groups, except that men of eighteen years will not be called up for service in any case until they attain the age of nineteen years.

3. Certain classes of skilled agricultural workers have been starred in addition to those employed in other industries, and a list of reserved occupations has also been prepared which includes certain occupations in trades allied to agriculture. The Army Council have issued instructions to all recruiting officers that starred men and men on the list of reserved occupations who wish to join the Army shall not be enlisted for immediate service with the Colours. They may only be attested, grouped, and passed to the Army Reserve, and immediately sent back to their civil occupations. They will be provisionally exempted from actual service, and will not be called up unless it is decided by the Central Appeal Tribunal that it is no longer necessary in the national interest for them to continue to be provisionally exempted.

The recruiting officer may raise a question whether the occupation of any man is, in fact, a starred or a reserved occupation, or whether it is, necessary, in the national interest, that the man be still retained in civil employment. The recruiting officer must bring the question before the local tribunal.

4. There are also the cases of men who are actually engaged in a starred occupation, but who have not been "starred." It will be open to the man or his employer, in a case of this kind, to make an application on the prescribed form in duplicate to the tribunal for the area in which the man's place of employment is situated, on the ground that the man is, in fact, engaged in a "starred" occupation. Forms for the purpose may be obtained from the clerk to the local tribunal.

If the recruiting officer agrees to the application the man will be treated as though he had been "starred," and the tribunal will then need only to notify the fact to the man or the employer as the case may be. If, on the other hand, the recruiting officer does not assent to the application, the tribunal are to investigate the facts, and to report with their recommendation to the Central Appeal Tribunal. If the Central Tribunal decide that the man is engaged in a "starred" occupation, the man is to be treated as though he had been "starred."

5. If any "starred" man has inadvertently been enlisted for immediate service with the Colours, the employer should write at once to the Area Commander, whose name and address can be obtained either from the local recruiting officer or from the clerk to the local tribunal, the War Office having promised to take all pos-

sible steps to transfer the man to the Army Reserve and send him back to his civil occupation.

6. In the case of a man who is not in the list of "starred" or "reserved" occupations, but who may be individually indispensable to an employer's business, the employer may bring the case of any such man—if he has been attested, grouped, and passed into the Reserve (but not if he has been enlisted for immediate service with the Colours)—before the local tribunal with a view to his being placed in a later group, but in these cases the man himself must also state that he is willing to remain in the employer's service if the claim is allowed, and the man's consent to this is therefore made a condition precedent to any claim by the employer.

If the recruiting officer raises no objection to the claim, the case may be treated as decided, and the tribunal will notify the employer accordingly. Failing agreement, the tribunal will decide whether the man should be placed in a later group, and, if so, in which group. It is not competent to the tribunal in a case of this kind to decide that a man is to be provisionally exempted from service and not to be called up with the group in which he is placed.

The local tribunal cannot place a man back more than 10 groups, but if, when the time comes to call up the group to which the man has been postponed, the circumstances continue to be such as to justify his being placed in a still later group, application to this effect may be made to the tribunal by the employer or the man, as the case may be.

It is important to bear in mind that an application can be made in respect of a man in this class only if he is attested and grouped in the Reserve, not if he enlists and immediately joins the Colours, and there is no obligation on a recruiting officer to see that a man who is not "starred" or included in the list of reserved occupations joins the Army under the condition that he is placed in his group. It will therefore be well that employers who may wish to make a claim in respect of any such men desiring to join the Army should point out to them that they should join under the condition that they are attested and grouped in the Reserve.

The term "indispensable" will be strictly interpreted. It will not be enough for the employer to show that he will be inconvenienced, even seriously inconvenienced, by the loss of the man. Speaking generally, the employer will have to show not only that the man is individually indispensable, but also that every effort has been made to obtain a temporary substitute for him, and that the employer has given reasonable facilities for men in his employment to enlist.

7. Farmers themselves, in common with other employers, have not been "starred," but as it is essential from the national point of view that there should be someone on each farm to direct the business, and ensure the proper cultivation of the land, Lord Selborne considers that farmers of military age who desire to join the Army should not enlist for immediate service with the Colours, but should be attested and grouped in Section B, Army Reserve. If a farmer remains on his farm it should be possible for him in most cases to release his son for military service unless that son is really indispensable to the cultivation of the farm owing to the enlistment of the skilled labourers.

8. Lord Selborne feels sure that in this time of critical need, and in view of the arrangements made for the retention of the skilled and indispensable men, farmers and other employers of agricultural labour will do all in their power to adapt themselves to changed conditions, and that by the employment of men not eligible for military service, by the employment of women (which can be very much extended), and by the reorganisation of their business generally they will do their very utmost to release men for His Majesty's Forces. *Board of Agriculture and Fisheries.*

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LVI).

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

L'EXPOSITION d'automne que nous avons annoncée a eu lieu au local de la Société Nationale d'Horticulture de France du 6 au 8 novembre.

Malgré le peu de temps dont on disposa pour mettre l'exposition sur pied, elle était bien variée et renfermait de beaux échantillons des produits de la saison. La recette consacrée à des œuvres en faveur des blessés, a été très appréciable.

Les Chrysanthèmes à grande fleur n'étaient pas fort nombreux, cependant on en admirait quelques échantillons remarquables dans les lots de MM. Cornu, Labbé, Martin et Edouard Debré.

L'apport le plus important était celui de la maison Vilmorin-Andrieux et Cie. L'élégance en fut remarquée. Il renfermait plusieurs nouveautés intéressantes, portant des noms empruntés aux événements actuels.

Les Orchidées étaient représentées par deux grands envois, les plantes vertes par celui de MM. A. Truffaut et Cie.

Quant aux envois de fruits, ils étaient importants et plusieurs d'entre eux d'une beauté remarquable. Des lots de qualité des meilleures variétés de Pommes de table étaient présentés tant par des amateurs que par des professionnels.

La *Revue Horticole*, sous la signature de M. G. T. Grignan, émet les appréciations suivantes : " Cette exposition a montré que la guerre n'avait pas arrêté l'activité de beaucoup de nos producteurs de la région parisienne et elle leur a en même temps apporté un stimulant, précurseur de l'avenir prochain. Il est réconfortant de constater que l'Horticulture conserve, à travers la crise mondiale, l'activité qui, pour elle, est une condition essentielle de durée."

LA CHICORÉE DE BRUXELLES.

AINSI que nous le faisons prévoir dans notre article de la semaine dernière, les formalités spéciales imposées par le gouvernement anglais pour l'importation des produits d'origine belge, ne seront pas exigées pour la Chicorée-Witloof. Il en sera de même pour le Raisin.

Cette solution est certes de nature à réjouir les Belges. Nous apprenons que le département de l'Agriculture belge du Havre a vivement plaidé la cause des producteurs de Chicorée et de Raisin, en faisant valoir notamment que ces produits, présentés pour l'importation, ne sont en aucun cas d'origine allemande et qu'ils intéressent des milliers de petits travailleurs voués à la misère si l'exportation n'est pas possible.

NOUVELLES DIVERSES.

L'UTILISATION DES FRUITS EN ALLEMAGNE.— La Centrale d'achat pour fruits instituée à Berlin a, comme on le sait, créé une section pour assurer le meilleur emploi de la récolte des fruits. A la suite de sa propagande en vue d'augmenter la fabrication de confitures et de marmelades destinées à remplacer la graisse et le beurre, les fabricants ont reçu des quantités de fruits doubles et triples des années antérieures. Plus de deux cents administrations communales ont fait des achats directs de fruits frais dans les centres de production. On estime que de cette façon des quantités considérables de fruits ont été utilisées qui normalement se perdent.

Il est évident que tout ce qui est porté à l'actif de l'organisation ne constitue pas un gain

et qu'il y a eu un important déplacement des stocks ou une utilisation plus rapide. Il serait intéressant cependant de connaître le résultat qu'ont donné les efforts en ce qui concerne les fruits sauvages. Déjà avant la guerre, l'Allemagne en employait des quantités énormes pour la fabrication de confitures; l'Ardenne belge notamment lui envoyait tous les ans des chargements entiers d'Airelles et de Myrtilles.

La Centrale s'est chargée de l'achat des fruits quand les producteurs ne parvenaient pas à s'en débarrasser. Pendant le mois de novembre, les prix fixés étaient les suivants :

Pommes, 5 marks le quintal; Poires, 4,50 marks; Prunes, 10 marks; Aubépines, 6 marks; Prunelles, 3 marks; Coings, 8 marks; Potirons, 1 mark 80; Mûres sauvages, 18 marks; Pommes sauvages, 1 mark 50.

LES BULBES HOLLANDAIS.— Comme suite à notre note relative à l'émotion causée en Hollande par les procédés de réclame auxquels ont recouru certains producteurs de bulbes, nous apprenons qu'une propagande est faite en vue d'un emploi plus général des bulbes à fleurs d'origine irlandaise. Ces derniers ne le cèdent en rien, disent les promoteurs du mouvement, aux bulbes hollandais, et leur emploi satisfait aux recommandations venues d'en haut de recourir de préférence aux produits nationaux, de façon à éviter un affaiblissement de la puissance financière du pays. D'un autre côté, on objecte que les prix des bulbes hollandais sont tellement bas qu'il est difficile de les remplacer auprès de la clientèle par du produit indigène.

LES EXPORTATIONS HORTICOLES DE HOLLANDE.— Pendant le mois de septembre, le commerce horticole néerlandais a maintenu son niveau. Pour ce qui concerne les principaux fruits et légumes, les envois vers l'Angleterre et l'Allemagne ont atteint les chiffres suivants :

	Total.	Angleterre.	Allemagne.
Pommes	10,094,200	592,000	9,227,900
Poires	7,284,800	1,295,900	5,896,500
Raisins	675,400	137,800	533,400
Choux-cabus ..	3,588,100	86,500	4,349,200
Choux-fleurs ..	2,204,000	—	2,166,800
Oignons	20,500,700	2,459,500	15,585,000
Concombres et Cornichons ..	5,517,600	544,400	4,970,800
Carottes	3,197,200	142,700	2,268,200
Tomates	2,809,200	1,974,200	831,500

Pour tous ces produits, exception faite pour la Tomate, les envois vers l'Allemagne ont donc notablement dépassé ceux vers l'Angleterre.

La frontière belge ayant été fermée jusqu'en novembre, la Hollande n'a pas reçu de Raisin de ce pays.

LA CRISE DES POMMES DE TERRE.— On mande de Genève que malgré l'abondance de la récolte en Allemagne, la disette des Pommes de terre est si grande à Cologne que même les hôpitaux, les asiles de nuit et les casernes n'arrivent plus à obtenir qu'une part réduite de ce qui leur est nécessaire. Les cultivateurs, bravant tous les ordres et prescriptions, gardent obstinément leurs Pommes de terre, convaincus qu'ils les vendront à des prix plus élevés. De grandes quantités de Pommes de terre, attendues depuis plusieurs semaines, ne sont pas encore arrivées. Et cependant le président du Reichstag en ouvrant la session, déclarait il y a quelques jours qu'il y avait abondance de Pommes de terre, cet aliment par excellence des classes populaires.

AIDE AUX AGRICULTEURS DES PAYS ALLIÉS.— La souscription ouverte en Angleterre à la fin d'aider au relèvement des exploitations agricoles détruites par la guerre, s'élève actuellement à 25,000 livres. Des envois de bétail et de matériel pour une valeur de plus de 5,000 livres

ont déjà été faits aux fermiers des régions françaises évacuées par l'ennemi.

L'IMPORTANCE DES LÉGUMES EN TEMPS DE GUERRE.— La guerre actuelle nous a permis de nous rendre compte de l'importance que présentent les légumes pour l'alimentation de l'homme. Ces produits sont réellement devenus indispensables et ainsi que nous avons eu l'occasion de le signaler à diverses reprises, leur marché n'est pas défavorablement atteint par la crise.

On sait qu'une partie de la population restée en Belgique vit uniquement grâce aux distributions d'aliments faites par les Comités de secours. La valeur des produits maraîchers ressort à nouveau des quantités considérables qui sont requises pour les cuisines populaires. En une seule semaine la préparation de la soupe a nécessité l'emploi de 47,250 kilos de Pommes de terre, 2,700 kilos d'Oignons, 3,045 bottes de Poireaux, 834 bottes de Céleris, 2,150 kilos d'Endives, 944 kilos de Cerfeuil, 400 kilos de Laitues, 189 kilos de Potirons, 200 kilos d'Epinars, 950 kilos de Carottes et 500 Choux verts.

CHEZ LES VITICULTEURS BELGES.— Dans le pays viticole du Brabant, les Allemands ont obligé les producteurs à organiser une garde bourgeoise, qui fait des patrouilles pendant la nuit. Seuls les ouvriers n'ayant pas d'exploitation pour leur compte, sont dispensés du service. Les administrations communales sont rendues responsables de l'ordre. Ce service imposé aux Belges, a évidemment comme résultat de permettre la réduction des troupes d'occupation et de rendre des hommes disponibles pour le front.

HORTICULTEURS ALLEMANDS PRISONNIERS EN RUSSIE.— Il résulte des correspondances commentées par la presse professionnelle allemande, que les horticulteurs prisonniers en Russie y subissent un traitement excellent. On les a mis à des travaux de jardinage, d'entretien de parcs, etc. Ils reçoivent des indemnités qui leur permettent largement de couvrir leurs frais d'entretien. De plus ils jouissent d'une liberté de mouvements à peu près complète.

DEMANDES D'EMPLOI.— Nous continuons à recevoir des demandes d'emploi émanant de jardiniers ou d'horticulteurs belges. L'une d'elles intéresse un horticulteur, architecte de jardins, 33 ans, marié et père de deux enfants, qui a été ruiné par la guerre et désire une place comme jardinier, avec habitation. Les offres peuvent être adressées au bureau du journal.

KORT OVERZICHT VOOR DE VLAMINGEN.

De tentoonstelling deze maand te Parijs door de Franse Tuinbouw-maatschappij gehouden mag, niettegenstaande den oorlog, als wel gelukt aanzien worden. Verschillende nieuwigheden van verdienste, met oorlogsnamen, waren aangebracht.

Belgische Drniven en Witloof mogen in 't vervolg zonder pleegvormen naar Engeland gevoerd worden.

In Duitschland kwam eene inrichting tot stand met het doel de benutting der anders verloren vruchten te verzekeren. Dank aan haar optreden werd buitengewoon veel geleid vervaardigd die in plaats van vet en boter gebruikt wordt.

Vit de overgrote hoeveelheden groenten die in Brussel door de Stenkomiteiten vereischt worden voor de bereiding der Volkssoep, blijkt eens te meer hoe noodzakelijk de moestelt geworden is.

THE LATE W. ATLEE BURPEE.

AN APPRECIATION.

ON Monday morning, when I received a message from Philadelphia that W. Atlee Burpee had passed away, I felt that one of the finest men I have ever known had passed out of my life. He was a great personality and a great friend. There was not, there could not be, anything small or mean about Atlee Burpee. He was cast in a big mould.

A Britisher by birth (he was born in Canada), he gave his adopted country all he had to give, but was a loyal friend to Britain to the end. I know that the war and the sufferings of Belgium caused him intense anguish.

In 1876 Mr. Burpee started the business which has grown to be so large and so famous. Much of his success was due to his prescience, and much to his literary taste and ability. Illustrative of the former, he said, regarding Sweet Peas in 1893, "Mr. Burpee thinks the Sweet Pea has never received the consideration from horticulturists and flower-lovers to which it is entitled, and he considers it the flower of the future. The improvements made in Sweet Peas by hybridisation and high cultivation are greater than in the case of any other annual except Pansies." How accurately he thus forecasted the popularity of the Sweet Pea, how generously he helped it, and how he profited by it, many of us know.

Once when I was leaving a luncheon party given by Messrs. Sutton at Reading, arm in arm with Mr. Burpee, we began discussing the speeches which had been made. I had spoken, and said it was surely possible that good feeling should exist among us though we were opponents in business. He said, "I didn't like your word 'opponents.'" I said, "Why?" "Because 'competitors' is a better word than 'opponents,'" he answered. That illustrated his fine, discriminating taste, even in the choice of a word.

A feature of Mr. Burpee's character—one which is often characteristic of truly great men—was this: He could, and did, appreciate the work of others, and was never slow to give expression to his appreciation.

He has left two sons, who, I am sure, will worthily bear the honour and the responsibilities associated with their name.

Those of us who were admitted to his close friendship feel that we shall not look upon his life again.

Best seem'd the thing he was, and joined
Each office of the social hour
To noble manners, as the flower
And native growth of noble mind.

W. Cuthbertson, Edinburgh, November 30.

HOME CORRESPONDENCE.

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

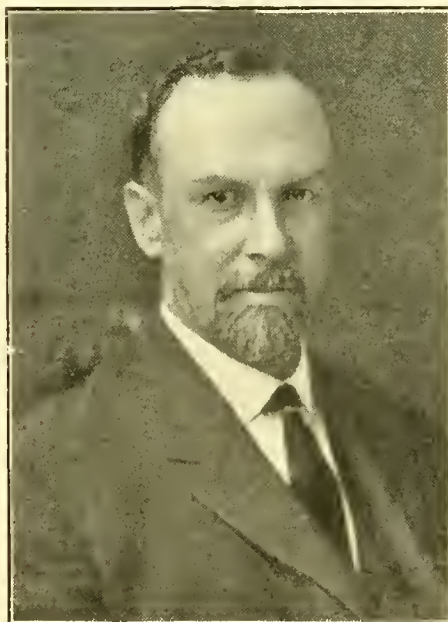
WOOLLY APHIS AND TROPAEOLUMS.—I have seen it stated that if *Tropaeolums* are planted around the trunks of trees subject to attack by woolly aphis the latter will be warded off, and that if they be planted around trees previously attacked the aphis will be weakened the first year, and banished the second year if the *Tropaeolums* be again planted. The species referred to, I believe, is the common garden "Nasturtium," so called. Can anyone offer any evidence for or against this suggested remedy for the "blight"? If effectual, it seems simple and greatly preferable to the usual methods of treatment, although probably not applicable to all circumstances of soil and situation. C. Nicholson, Hale End, Chingford.

APPLE GASCOYNE'S SCARLET (see p. 334).—Whatever appears from E. M. in the way of recommendations has to be treated with respect,

but surely he has made a statement regarding this Apple which must be taken with some caution. Here, for instance, where the soil is a deep, fertile loam upon the greenstone, Gascoyne's Scarlet is a great failure. It is undoubtedly, of all Apples yet tried here, the most subject to canker. We have had to discard it, and I do not know of a garden in the district where it grows well. Again, I question the desirability of applying house sewage to the roots of Apple trees. This may do upon chalk and limestone, but upon fertile soil at all suited to fruit I imagine the health of the tree would suffer. Harry Williams, Tolvean Gardens, Redruth, Cornwall.

—In the recent catalogue of fruit trees and Roses issued by Messrs. George Bunyard and Co., a most interesting publication, it is stated that Gascoyne's Scarlet Apple was "raised by Mr. Gascoyne, of Bapchild, Sittingbourne, and introduced by our firm in 1871." E. M. advocates hard pruning for this handsome variety, and no doubt this advice is based on his experience, but Mr. Edward A. Bunyard, who is responsible for his firm's catalogue, says "prune lightly." A. C. Bartlett.

TULIP BULB MITE.—A few days ago some Tulip bulbs were sent to me for examination, which were said to produce in the workmen handling them very unpleasant symptoms, such



THE LATE W. ATLEE BURPEE.

as inflammation round the roots of the finger nails, a burning and tingling sensation under the nails, the flesh cracking and leaving the nails on the under surface. The remedies tried were ointment of zinc oxide and chalk, and balsam of Peru mixed with lanoline, but without result. The bulbs were examined for the presence of fungi, but no hyphae were found. However, on pulling off a portion of the basal stem of the bulb, the bulb mite, *Rhizoglyphus echinopus*, Furn., was found inside. Possibly the hooked tips of the legs of the mite would cause irritation in persons with abnormally sensitive skins, but I should be glad to know from any of your readers if these symptoms are of common occurrence. I recommended sulphur ointment as a remedy, as that is fatal to the itch mite, *Sarcoptes scabiei*, but have not as yet heard the result. E. M. Holmes, Rathcree, Sevenshaws.

TRANSPIRATION, ASSIMILATION AND RESPIRATION.—I am sorry to trespass again on the patience of your readers, but I must point out that the Rev. G. Henslow (p. 339) has obviously confused the physiological sense of colour with the physical reality of wave-length. We know that,

in the solar spectrum, the wave-length of the rays is longest in the red, and becomes progressively shorter as the violet is reached. The brain receiving a stimulus from a ray of a given wave-length translates this into a corresponding colour sensation. Unfortunately, however, the optic mechanism of the eye and brain is unable, without assistance, to analyse rays of mixed wave-lengths, and thus interprets them as being of a given colour—say green or orange. In other words, it does not distinguish between the muddled character of a complex sensation and the corresponding simple physical realities. But it is the physical reality of wave-length that is of primary importance in energetics, and if one is to reason clearly, this must be kept vividly in view. It is evident, therefore, that Mr. Henslow's arguments, based on primary colours and supposed mixtures, are not *ad rem*. The only thing that matters is a correct appreciation of wave-length and the intensity of the particular kind of light. I am not concerned with, nor indeed am I much interested in, speculations as to what parts of the spectrum may be "presumably" concerned with transpiration and assimilation. The matter is open to the direct test of experiment on the part of any one equipped with sufficient physical (and physiological) knowledge; such experiments have been repeatedly made, and the results do not support Mr. Henslow's contention as to the presumed influence exerted by those parts of the spectrum to which he specifically refers. Mr. Henslow appears not to realise that temperature is only one of several conditions that govern chemical reaction in general. Any given chemical operation is only possible within a more or less limited range of temperature. The group of chemical reactions which, collectively, we call respiration, merely constitutes a special example of the general case. In short, I must continue to affirm, and I do so without fear of contradiction on the part of any one conversant with modern plant-physiology, (1) that light is not the cause of transpiration, and (2) that heat is not the cause of respiration. J. B. F.

TRENCHING LAND (see p. 301).—Mr. Brotherton touches in his lucid manner upon a reasonable and beneficial phase in horticulture. Gardeners know the result of deep trenching, and do not require reminding of its value, but among amateurs I fear the subject is but indifferently understood. I am not sure that all gardeners understand the most beneficial method of trenching, and all do not agree as to the best plan to follow. Some consider it wise, and others harmful, drastically to trench heavy soil by bringing up pure clay from the bottom of a 3-foot-deep trench and burying the more amenable surface soil at the bottom. I am of opinion that it is better to trench deeply and grow a crop without dung, than to use manure without trenching. I cannot imagine any practical person burying half decayed manure at the bottom of a 3-foot trench. If it were long, strawy manure, used with a view to obtaining greater porosity of the soil, I should not then complain of the practice. Soil that has not been previously trenched, dug, or ploughed more than 1 foot or so deep, and has a hard pan-like subsoil, through which water from heavy rains cannot easily percolate, is rendered wet and cold and most unfavourable for growth. Plants of all kinds do not suffer so much from drought in deeply-trenched soil as in a shallow root-run. To prove this, even to a casual observer, one has only to note the difference in the colour of the grass in a field where a ditch has been filled up or where a deep drain has been cut. It is obvious that trenching provides a deeper rooting medium. Onions of the Ailsa Craig type may be grown for exhibition purposes on the same plot for a number of years, provided the soil is dug deeply, whilst for Parsnips, Carrots, and other deep-rooting vegetables, trenching is absolutely necessary to ensure success. The most effective method of trenching is undoubtedly that of bringing up the bottom spit of soil 3 feet deep to the surface, if certain conditions can be carried out afterwards. If the trenching is done during dry weather, and some months before the crop has to be sown or planted, the crude soil will be much ameliorated by exposure

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

NOVEMBER 23.—*Present*: Mr. E. A. Bowles, M.A. (in the chair), Messrs. J. Ramsbottom, J. T. Bennett-Poë, W. E. Ledger, W. C. Worsdell, W. Hales, E. J. Allard, A. Worsley, A. S. Horne, D.Sc., H. J. Elwes, J. Fraser, E. M. Holmes, and F. J. Chittenden (honorary secretary).

Bud on Fern petiole.—Mr. W. C. Worsdell said he had examined the piece of frond of the Fern (*Microlepia*) shown at the last meeting, and found that the bud arose from the upper surface of the stalk and not, as is more common with buds on Fern fronds, from the lower. The position of an adventitious bud on the upper surface is, however, normal for some species.

Lilium sp. from Hong-Kong.—Mr. H. J. Elwes referred as follows to specimens of a Lily sent from Hong-Kong. "It seemed to me to be indigenous, and it is included in the local floras as *Lilium Browni*. Of two specimens which I flowered one was much more like *L. longiflorum* in leaf and in the tubular flower. Mr. Grove thinks as I do, that the Hong-Kong plant is most like what has been called *Browni leucanthum* from Central China, but that should have axillary bulbils, and is a very different plant from the cultivated *Browni*, which, so far as Mr. Grove knows, has not been found in a wild state. Franchet says that the only difference between *longiflorum* and *Browni* is that one has a glabrous and the other a pilose nectary, but this difference in the flower of *longiflorum* which I send for comparison seems trifling." These specimens were referred to Mr. W. C. Worsdell for further examination.

Fruits of Citrus trifoliata.—Several small fruits (containing seeds) of the hardy *Citrus trifoliata* (*Aegle sepiaria*) were sent by Lady Ilchester from Holland House. They had been produced on a tree 9 feet high by 5 feet through growing there.

Foliose spathe of Cyrtopidium.—Mr. J. T. BENNETT-POE showed a flower of *Cyrtopidium insigne* Harefield Hall subtended by a spathe which had developed into a leaf precisely similar to the ordinary foliage leaves of that plant. The plant had borne a second flower with a similar spathe.

Supposed sporting in Pear.—Miss H. Barr, of Apsley Cottage, E. Grinstead, sent a Pear (*Beurré Diel*) with the following curious history:—"It was originally a Pear tree which bore very small, indifferent summer Pears, and a graft from a good tree, name unknown, was put into it by a friend in this neighbourhood thirty years ago. The graft never gave sign of growth, and the stock, which was cut back when grafted, threw up fresh branches, and bore the same poor fruit as before for twenty-five years. Then a new shoot appeared of quite a different character, which blossomed and bore one very fine Pear. This was only four years ago, and it was 18 inches below the place where the graft was put in. To strengthen that shoot we cut off the branches of the stock once more, after which three more shoots of the same character as the one just mentioned appeared and bore the same kind of fruit. These were still lower down on the parent stem. We then cut down the trunk of the parent tree to within a short distance of these new shoots, and far below the place where it had been grafted, with the result that these four shoots have strengthened and this year have borne ten fine Pears, similar to the one sent." The Committee thought the probable explanation of the curious history was that the Pear tree had originally been double-grafted, the variety *Beurré Diel* being used as the intermediate stock, and that dormant buds had suddenly awakened into activity after a rest of at least twenty-five years.

Double Apple.—Mr. T. H. Dipnall sent an Apple which had two cores and appeared from the outside to be two Apples cohering and arising from a single stalk. This kind of double fruit is not very uncommon, and apparently arises from a fasciated flower containing two pistils.

Damage by hail.—Dr. Voelcker sent Apples

and Pears from a garden in Molesey, of which it is reported that the owner was certain that prior to a hail-storm (which occurred either on July 11 or July 18 of this year) the fruit was unmarked, and that the next morning he saw, on trees exposed to the full storm (hail-stones lay thick upon the ground), the pittings or markings now to be seen upon the fruit. On the Apples the pits were rounded depressions of a different green from the rest of the fruit, and on the Pears they were similar but had also cracked. In some places agglomerations of stone-cells occurred just beneath and attached to the skins, similar to those seen in the disease (which is considered to be of physiological origin) called "lithiasis." Similar growths have also been ascribed to the attacks of mites.

Gall on Willow.—Lady Margaret Bickersteth sent from Cottingham a terminal gall with a rosette of rather broad leaves from a Golden Willow. This gall is the result of the attack of the gall-fly *Cecidomyia rosaria* upon the terminal bud, and is of common occurrence in some species of Willow.

MANCHESTER AND NORTH OF ENGLAND
ORCHID.

NOVEMBER 18.—*Committee present*: Rev. J. Crombleholme (in the chair), Messrs. J. Cypher, P. Foster, A. R. Handley, A. Hammer, H. Thorp and H. Arthur (secretary).

GROUPS.

Messrs. J. CYPHER AND SONS, Cheltenham, staged a group, for which a Silver Medal was awarded. *Cypripedium insigne* Dorothy, *C. Leeaanum* Corona, *C. Clunkaberryanum*, *C. Dreadnought*, *C. Eliator*, *C. Niobe Westonbirt* var., *Cattleyas* of the labiate section, *Oncidium Rogersii* and others were included in this group.

Messrs. A. J. KEELING AND SONS, Bradford, staged *Cypripedium Charlesworthii* var. *La Milo*, *C. Oberon*, *C. Hoyleanum superbum*, *C. Hitchensae magnificum*, with a number of unnamed seedlings.

AWARDS.

FIRST-CLASS CERTIFICATE.

Sophro-Cattleya Doris Cobb's var.—The largest flower of its kind, of good form and colour. Shown by R. ASHWORTH, Esq.

AWARDS OF MERIT.

Cattleya lobiata var. *Mudros* and *C. Fubia alba Ashlands* var.—Both shown by R. ASHWORTH, Esq.

Cypripedium Priam Haddon House var. and *C. Radishall* (radians x Harefield Hall).—Both from P. SMITH, Esq.

AWARD OF APPRECIATION.

Odontoglossum Promerens var. *Roundhead* (eximium x crispum).—A home-raised seedling, having a full, round, evenly-blotted flower. From R. ASHWORTH, Esq.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 19 AND 20.—The annual exhibition of this society was held on the above dates in the Music Hall Buildings, Aberdeen. As might have been expected in these abnormal times, the display was somewhat small compared with that of former years, but what was lacking in quantity was made up for in quality. The proceeds of the exhibition were handed over to the Y.M.C.A., for the work being done among the soldiers.

POT PLANTS.—There were not many entries in this section, but the quality of the blooms shown was good. A. R. GRAY, Esq., Carthdee House, Aberdeen (gr. Mr. Robert Begg), was awarded no fewer than five first and five second prizes. Mr. GRAY'S Chinese Primulas were much admired.

CUT FLOWERS.—This section was the outstanding feature of the show, the majority of the entries being fine samples of clean, fresh, well-grown flowers. For 6 vases Japanese Chrysanthemums, Mr. A. R. GRAY was placed 1st, his well formed, delicately coloured blooms attracting much attention. His varieties con-

to air, frost, rains, and winds. (The necessary conditions to warrant this method being adopted are (1) the addition of a compost sufficient and suitable to sow or plant any crop in with a reasonable prospect of success; (2) the ground must be retrenched the following year, not only to intermix the various soils, but to bring the bottom layer to its original site. Naturally these necessities require time and material, but where both are impossible, the more drastic method of trenching is better not adopted, as several years' cultivation will be necessary before bringing such soil into a reasonable workable condition. The alternative method is that of trenching fully as deeply, or even more so, but having two trenches open at the same time. The surface soil may be left in exactly the same position as before, and the ground will carry a good crop the first season afterwards. The ground may be broken up as well, or even better, by an extra few inches in the last spit. If strawy manure or freshly-gathered leaves are added to each layer, the whole mass will be gradually improved, especially when the plot is retrenched. E. M.

THE FOOD SUPPLY.—You may remember that when the War broke out, both the Royal Horticultural Society and our firm recommended the immediate sowing of certain early-maturing types of vegetables in order that the food supply of the country might be quickly augmented. To show that such recommendations were practicable, we made large sowings ourselves in our grounds at Reading, both last year and this, and each year exhibited the produce at the Royal Horticultural Hall. Spring Cabbages, as you are aware, are nearly always sown in July or August for transplanting, but under this treatment they do not, as a rule, form heads till March, April, or May of the following year. This season, however, we thought it would be interesting to show what growth Cabbages would make if the plants were singled out immediately they were large enough, and not transplanted. This method of treatment has been very successful, and from the sample we send you by post to-day you will notice that the heads are as well formed as many Cabbages are by April, thus showing that by sowing an early-maturing variety (such as Sutton's Harbinger), and thinning out instead of transplanting, it is possible to get heads four to five months earlier than usual. Sutton and Sons.

[Excellent little Cabbages accompanied this note.—E.M.]

RHODODENDRON CAMPYLOCARPUM.—Referring to Mr. Mottet's remarks (p. 338) regarding *Rhododendron campylocarpum*, Hook., of Sikkim, which he states is planted and flowers every season in M. De Vilmorin's rockery at Verrières le Buisson, France, and that it only requires a small amount of protection for the roots in winter, it will no doubt interest him to know that the plant flowers profusely every season at Leonardslee. Ours are fine bushes, and, so far as I am aware, they receive no protection, nor have I ever known them to be injured by cold. J. H. U.

YEW POISONING.—I still contend that toxine is a well-known poison. Mr. Elwes quotes Dr. Monro as an authority, accepting his opinion formed in 1892. Rapid strides in chemistry have been made since that date. To justify my previous remarks, I describe briefly this poison: Toxine (C₁₀H₁₅NO₂) is obtained from the leaves, twigs, and fruit of the Yew by extraction with ether, the solution is quickly shaken with acidulated water, and precipitated by the addition of ammonia. Toxine is crystalline, barely soluble in water, but readily so in ether and alcohol. Melting point 82° C. H. Clinton Baker.

—Mr. Holmes merely repeats what I have previously heard, that the Irish, or upright, Yew is more dangerous than the common kind, but this is only rumour; there is no evidence to support it. The one fact that he brings out is that vigorous and healthy animals are unaffected, or that they are so used to eating Yew that it does them no harm. This is most unsatisfactory, and, as I said before, leaves us with something still to learn. T. Smith, Newry.

sisted of Hon. Mrs. J. Ward, White Queen, Reginald Vallis, Mrs. A. T. Miller, Mrs. G. Mileham and Francis Rowe. Mrs. DUNBAR-DUNBAR, Seapark, Forres (gr. Mr. John A. Grigor), was placed 2nd, her exhibit consisting of W. Turner, Francis Jolliffe, Bob Pulling, Thomas Lunt, Edith Jameson and Miss A. E. Roope. The same competitor had several fine entries in this section, and for her exhibits here and elsewhere in the show she won the Silver Rose Bowl, to be awarded to the most generally successful exhibitor. This is the second time Mrs. DUNBAR-DUNBAR has won the trophy, and should she win it a third time, it will become her own property. In artistic and decorative work some finely-conceived designs were shown by Miss ALICE BURNS, florist, Victoria Road, Torry, Aberdeen, her leading exhibit being a wreath of white Chrysanthemums, with an edging of autumn leaves. Mr. ALEXANDER BURNS, florist, New Market, Aberdeen, also showed some very fine work. There were also shown here, but not for competition, some hand bouquets by Mr. SINCLAIR, the secretary.

FRUIT.—In this section, exhibitors from Morayshire and Nairnshire carried off the chief prizes. Apples were well shown, Mrs. DUNBAR-DUNBAR, Mr. ALEXANDER DUFF (Darleston, Elgin), and Mr. J. B. CRAIGIE, Linton, Cluny (gr. Mr. J. Ferguson) dividing the chief honours. In culinary Apples, Mrs. DUNBAR-DUNBAR showed good specimens of Peasgood's Nonesuch, Hambling's Seedling, Bramley's Seedling and Emperor Alexander. In dessert Apples, her Blenheim Pippin, Worcester Pearmain, King of Tompkins County and James Grieve were notable. Mr. DUFF's Peasgood's Nonesuch were much admired, while Mr. CRAIGIE's Worcester Pearmain and Allington Pippin were also well grown. Pears were few in number, but the dessert varieties sent by Mr. CHARLES G. CUMMING, Pitgavenny Gardens, Elgin, were excellent. For Grapes, Mrs. J. O. COUPER, of Craigiebukler, Aberdeen (gr. Mr. John Dey), was 1st, and for Tomatos Mrs. COUPER was also awarded 1st place.

VEGETABLES.—For the best collection of vegetables, 6 varieties (Tomatos excluded), to be shown on a space not exceeding 4 feet by 3 feet, the Misses McLENNAN, Springhill, Aberdeen (gr. Mr. D. Scorgie), won the 1st prize. The specimens of Early Round and Aberlady Early Potatos in the collection were much admired. The same competitors were also awarded the 1st prize for Cabbages. Mr. WILLIAM WEBSTER, Muirsk, Turfhill, was placed 1st for Brussels Sprouts; Mr. J. MCKENZIE, Buxburn, Aberdeenshire, for Cauliflowers; Mr. D. B. D. STEWART, of Drumduan, Aberdeenshire (gr. Mr. Gardiner), for Celery. For Turnips, Leeks, Onions and Carrots the chief prize-winners were Mrs. WALKER, Rosefield, Elgin (gr. Mr. J. Coutts); Mr. WILLIAM WEBSTER, Muirsk; Mrs. COUPER; and Mr. J. MCKENZIE, Buxburn. There was a very good display of Potatos; for 4 varieties, 6 of each, 2 round, 2 kidneys, Mr. J. B. CRAIGIE gained the 1st prize with capital dishes of Perfection, The Chapman, Snowdrift and Forglan Flower. In a similar class, restricted to market gardeners, Mr. WILLIAM LAWSON, Cornhill, Aberdeen, was placed 1st. Mr. J. B. CRAIGIE won three 1st and three 2nd prizes for Potatos.

AMATEURS' CLASSES.—The sections devoted to amateurs were well contested, their best endeavours being shown in the cut-flower classes. The leaders here were Mr. JOHN DAVIDSON, Aberdeen; Mr. JOHN L. MILNE, Aberdeen; Mr. DAVID RITCHIE, Aberdeen; and Mr. JOHN THOMSON, Aberdeen.

SCOTTISH HORTICULTURAL.

NOVEMBER 2.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on the 2nd ult., the President, Mr. Pirie, being in the chair.

Dr. R. Stewart MacDougall gave a lecture on "Some Plant Enemies Scheduled by the Board of Agriculture." He exhibited a set of preparations illustrating the plant enemies which were the subject of special legislation in Britain. The scheduled insect and fungus enemies were taken

in detail, and it was argued that only a few were likely to do great damage in Scotland. Among these, however, were certain diseases, the prevalence of which in Scotland interfered with Scottish trade, as certain countries abroad refused entry to Scottish produce until a clean bill of health could be certified. The lecturer, in arguing that each country should prepare its own list of its worst plant enemies, suggested lists for Scotland in both agriculture and horticulture. He advocated the training of experts in plant-pathology, so that consignments of plants to other countries might be examined and certified in the country of exportation, and thus save the necessity of their being opened at the port of entry.

Obituary.

ADAM BLACK.—This well-known Scottish gardener, who died at his residence in Dundee on November 1 in his ninety-sixth year, was born at Fort, Fifeshire, in November, 1819. Mr. Black was actively engaged in gardening for nearly seventy years, forty-eight of which were spent as gardener at Union Mount, Perth Road, Dundee, now the property of the University Council. He was a well-known figure in local horticultural circles, and during his days as gardener to the late Mr. O. G. Miller, at Union Mount, was an especially successful Grape-grower.

WILLIE JOLLY.—Besides being a prominent member of the Haywards Heath and District Horticultural Society, Mr. W. Jolly, who died at Boltro Road, Haywards Heath, on November 26, at the age of sixty-six years, took a great interest in the public affairs of his district. He was hon. secretary of the Horticultural Society for several years.

GEORGE C. BECKWITH.—It is with great regret that we announce the death of Mr. G. C. Beckwith, head of the nursery firm of Messrs. G. Beckwith and Son, Hoddesdon, Hertfordshire. He died on Tuesday, the 30th ult., in his 69th year. The deceased was born at Tottenham, and, being early initiated into the trade, he became while still a youth a successful nurseryman. The present business was established at Tottenham about 50 years ago, and was afterwards removed to Hoddesdon. Mr. Beckwith specialised in Carnations, very large numbers of which he cultivated successfully under glass.

SAMUEL BIDE.—We regret to announce the death, on the 25th ult., in his seventy-third year, of Mr. Samuel Bide, head of the well-known nursery firm of S. Bide and Sons, Alma Nurseries, Farnham, Surrey. Mr. Bide was a son of the late Richard Bide, a nurseryman, of Hale, near Farnham. He thus began early his nursery career, and following worthily in his father's footsteps, gradually built up a prosperous business. He took a keen interest in every aspect of horticulture, and his business covered a particularly wide scope. Forest trees formed one branch, and thousands of Spruces were annually despatched all over the country at Christmas, to be used as "Christmas trees." Roses were also extensively grown, to the number of about 200,000 plants in the open, and 80,000 under glass. Fruit trees also engaged his attention, and he grew Seakale largely, a hundred acres or so being given up to this profitable crop. Mr. Bide also engaged in farming. The nursery has branches in Woking, Kingsley, and Islington, as well as shops for the sale of retail produce in Aldershot and Guildford. The two sons of the deceased, Messrs. Arthur and Herbert Bide, are engaged in the business.

TRADE NOTE.

THE well-known Dutch seed-growing firm of Sluis and Groot has been converted into a limited company, with the style and title of Sluis and Groot's Zaaiteelt en Zaadhandel. The business remains in the same hands as before, and the capital is also the same. The address of the company is as before—Enkhuizen, Holland.

ANSWERS TO CORRESPONDENTS.

BEGONIA GLOIRE DE LORRAINE: W. C. A. Cut the shoots down to within 8 inches of the pot after they have flowered, and the plants rested for six to eight weeks in a temperature of 55° to 60°. Select strong basal growths as cuttings, and root them quickly. It is not usually necessary to sterilise the soil. The compost should consist of two parts fibrous loam and one part peat and one part silver sand, with a sprinkling of powdered charcoal.

CINERARIA LEAVES: W. K. The plants are attacked by Cineraria leaf rust—*Coleosporium senecionis*. This fungus is very common on Groundsel, from which it has probably spread to the Cinerarias. Spray the plants with a rose-red solution of permanganate of potash.

MUSCAT GRAPES BROWNED: Vitis. The leaves and fruit of the Vines have been injured when young by a mite. Fumigate the house with sulphur twice, allowing an interval between, during the resting season, and afterwards spray the Vines with a mild insecticide, which will not be injurious to the young foliage.

NAMES OF PLANTS: A. Buchan Hepburn. Coton-easter Simonsii. C. buxifolia has smaller and rounder leaves, and the fruits are of a deep-crimson colour.—J. Edwards. Helixine Soleirolii: native of Sardinia and Corsica.

NEPHROLEPIS AFFECTED: B. There is no disease due to either fungous or insect pest present in the plants sent for examination. Probably the trouble is caused by stagnation of water at the root, and proper drainage would correct the error.

PINUS STROBUS, THE WEYMOUTH PINE: G. H. T. The insect pest that you have mistaken for mildew is a coccus, to the attacks of which this Pine is very liable. In some parts of the country this Pine has been so badly infested that the trees have had to be cut down and burnt. Try syringing with a fairly strong solution of soft soap and paraffin at intervals during the winter and early spring, but discontinue spraying when the young growths begin to expand. The syringing should be done in the morning, so that the trees become dry before night. The pest must be eradicated or every Pine in the neighbourhood will be infested.

BAMBOO: B. L. If you send representative pieces showing leaves and stems of different ages we will do our best to name the species.

WINTERING GLOXINIAS AND STREPTOCARPUS TAYLORI: W. C. Gloxinia tubers, when resting during the winter months, require to be stored in a moderately cool, dry place. They may be allowed to remain in the soil and pots in which they have been grown, or they will keep equally well if shaken out of the soil and placed in boxes of dry sand, which will preserve them from the air, as if exposed they shrivel and become seriously injured. If a succession of bloom is required through the summer, some of the tuberous roots should be potted in January, and successional batches planted in February and March. They should then be placed in a stove temperature, and the roots afforded very little water until growth has commenced. Gloxinias require a moist atmosphere while making their growth. All the species and hybrids of Streptocarpus are fibrous-rooted plants, therefore water must not be withheld at any time. These plants are usually treated as annuals, but those of the achimenesiflorous section may be grown for two or three years with good results. Seeds sown in January will provide good plants, which will flower freely during the late summer and autumn. They should be potted in a light, rich soil, grown in a temperature of 60° to 65°, and shaded from bright sunshine. The leaves must not be syringed, for, although a moist atmosphere is beneficial, wetting the leaves is harmful. Streptocarpus may be wintered in a temperature of 50° to 55°.

Communications Received.—J. H. Dick.—A. H.—Sir H. M.—A. W.—M. B.—H. G. C.—E. P. Victoria.—A. O. E. M.—B. J.—H. W.—H. W. Ward.—C. T.—J. F.—A. H. Cade.

THE Gardeners' Chronicle

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THE MARKET FRUIT GARDEN.

NOVEMBER was a month of considerable rainfall, but it embraced two dry spells, during which planting could be carried on advantageously, except when the land was hard with frost. Rain was measured at my station on eight days amounting to 3.60 inches. Frost was unusually severe for November on several occasions, the extreme here being 9° 4ft. from the ground 100ft. above sea level. No doubt it was greater on the lowest ground, but in my situation near the South Coast severe frost is uncommon. As many as 15° were reported from Carlisle, and 12° from Hampton Court.

FROST AND APHIS.

Is there any reason to hope that the frost killed a large proportion of the oviparous aphides? Mr. Theobald states that they begin to deposit eggs early in November, continuing up to about December 7. Here the first frost was 7° on the night of the 14th, and possibly vast numbers of eggs had been deposited before that date, otherwise it may be supposed that a frost of even such moderate severity would kill every aphid exposed to it. The period of egg-depositing named refers to the permanent Apple aphid, *A. pomi*, but from what is said of the return of the migrating rosy aphid, *A. sorbi*, the egg-depositing period is about the same for this species as for the other. My impression has been that the reason why aphid infestation on Apples and Plums is worse in my orchards than in most other parts of the country is that frost of any

considerable severity is rare in November, and still rarer in the latter part of April or in May, when the insects are beginning to appear on Apple trees. But, as is not uncommon with plausible theories of this kind, facts do not altogether support my supposition. In November, 1912, frost occurred on three occasions, but only 2° in the first week of the month, and 3° to 7° in the last, while no frost at all was registered in the following April or May. There was a very bad attack of aphid on Plums and Apples in 1913. This seems to support the supposition. In the following year, on the contrary, there was an almost complete immunity from aphid attack after an entire absence of frost in the previous November and in April and May. In November, 1914, from 2° to 4° of frost occurred here on five occasions from the 14th to the 21st, and in the following April 2° were registered on the 14th and 4° on the 21st, while no frost occurred in May. The worst aphid infestation of Apples ever known occurred in the following year, though Plums were scarcely affected. The evidence, it will be seen, is entirely adverse to my supposition so far as results in 1913 are concerned. With respect to the two other seasons, it is favourable to the theory only if 2° of frost are sufficient to kill ovipositing aphides. That 4° of kill the insects that are hatched by the last week in April was proved, I think, last spring, when I found many dead after the frost of April 21.

THE SUGGESTED APHIS INVESTIGATION.

Last month (page 288) I suggested that some readers might co-operate with me in observations as to whether aphid infestation on Apples or Plums arises from eggs on the trees. My contributions to that inquiry may begin at once. We began to prune Apples, three of us, on November 6, and up to the end of the month not a single aphid egg had been seen. After the worst aphid infestation of Apples ever experienced, this is remarkable. Thousands—perhaps millions—of Apple sucker eggs have been seen, although they are less conspicuous than aphid eggs. There is no doubt that sucker infestation arises from eggs deposited on the trees, as multitudes have been noticed year after year. They are deposited mainly before the autumn is far enough advanced for the destruction of the psyllas by frost. Further, it is to be observed that, while we have seen swarms of the winged suckers among the trees during the autumn, before frost came, we saw no aphides. As it may be taken for granted that no aphides could withstand the frost of 9° that occurred on the night of November 26, it follows that no eggs can be deposited on the trees after the end of the month; and it follows, also, that if an aphid infestation should take place next spring or summer it will not be from eggs deposited on the trees during the present year.

BLACK CURRANT MITE.

The past season was more favourable to the spread of the attack of the Black Currant mite than any noticed before. Up

to the tenth season from planting I have been able to keep the bushes in fair condition for cropping by having the big buds picked off annually, except where entire infested shoots were cut off or whole bushes badly infested were dug up. This year, on the other hand, I have bushes planted seven to eight years ago in much worse condition than any have been before at those ages. In another orchard planted three years ago at least forty bushes per acre will have to be dug up, while a great deal of work will be necessary in cutting off infested shoots and in picking off isolated big buds. The last operation will even be necessary on a considerable scale in a small orchard planted so recently as last autumn with yearling bushes, on which it was difficult to find a single big bud. Apart from this unfortunate spread of mite infestation, the bushes made splendid growth last summer. By the way, a striking confirmation of the statement of entomologists to the effect that the mite which infests Cobnuts does not attack Black Currants is to be seen in another small plantation. In half of it, planted in the autumn of 1910 with Plums, Cobnuts, and Black Currants, there are plenty of big buds on the Nuts, but hardly any on the Currants; whereas in the other half, in which there are no Cobnuts, big buds are numerous, although the bushes are a year younger than the others. The latter half adjoins two rows of old Black Currants which were infested with mites, but had been carefully attended to every year. Before the pestilent mite obtained a strong hold in this country the ordinary life of Black Currant bushes, even under top fruit, was at least fifteen years, unless they were too much overshadowed by the top fruit trees. Now we cannot reckon on a life of more than ten years from the planting of the bushes in their permanent situation. Most of my Currants are of the variety Boskoop Giant, declared to be almost immune to the mite when first introduced in this country. Thousands of acres of Black Currants have been grubbed up in the last ten years, and the fruit will never be plentiful in this country again unless some new varieties prove permanently immune to mite attack. Two varieties are now sold as immune, but whether they will prove so permanently remains to be seen. I have tried one of them, the Edina, upon a small scale, and have not seen any big buds upon it since it was planted four or five years ago, but it is not so heavy a cropper with me as Boskoop Giant. The bunches are numerous, but very short, and the berries are not nearly so big as those of Boskoop Giant in my orchards. Perhaps this comparison does not hold good in other soils. As to spraying for the destruction of mites, the very numerous operations necessary seem to me quite impracticable on a large scale.

NO CHANCE FOR A COBNUT CROP.

After two full crops my Cobnuts are to take a rest in the coming season. This seems to me obvious, because they are almost entirely devoid of catkins. Not one tree in twenty has any catkins at all, and these male blossoms are not at all thick

on the few trees which show any. It can hardly be imagined that enough pollen will spread from the small number of trees bearing catkins to fertilise more than an extremely small proportion of the female blossoms.

APPLE GRADING MACHINES.

I have not yet been convinced of the economy of using an Apple grading machine. It grades only for size, and not at all for quality; so that a packer who wishes to avoid sending pecked, otherwise flawed, or misshapen fruit among his firsts must hand-pick after machine grading. Moreover, if the fruit is to be packed properly, and not simply tumbled into the empties after being machine graded, every Apple must be handled. Again, with respect to dessert Apples particularly, a well-coloured specimen of medium

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

XXII.—WOLVESDEN HOUSE.

Wolvesden House is a small square of low mud-roofed rooms, arranged round a muddy yard, with byres and mulestalls attached. Before we took it on lease, and raised it to a higher walk of life with stoves and white wallpaper, and spoiled camera plates for windows, it was the main mule inn of the valley, but now the mules must needs go higher up, to one of the two similar but smaller inns that similarly crouch against the side of the glen, so low and flat that you can hardly tell they are there at all. The valley here is about a couple of hun-

Chrysodraba group, while on an island in the midst of the runnels the Rhododendrons come quicker into blossom than elsewhere. So much for the central scene of this year's work—a scene at present filled with peace and all reasonable hopes of peace, in as violent a contrast to our cyclones of last season as is the placid Europe that we left with the Europe that now seethes in helpless fury of anguish.

In the first days of June there is still surprisingly little to be seen. The wall of Rhododendrons, indeed, is beginning to burst into bloom, but even these are slow to make a blaze. One of them is a large-leaved bush, with trusses of white flowers, not of startling size, but making each shrub look as if blobs of melting snow from a recent fall were lodged on the top of every glossy shoot. Then there is a middle-sized plant, very free with its blossoms, and recalling *Rhamoenum* (*Azalea*) (see fig. 125). The flowers are of a rich lavender-purple, often intensifying to the forbidden shade. But the most charming of all those at present open is a fine, wiry little shrub of some 2-3 feet, with tiny grey leaves, and small flowers of lavender-blue, borne singly or in pairs, but in such profusion that the whole mountain side goes grey when all the bushes are in bloom (see fig. 126). There is still a fourth species, but this is now far from its opening, and all one can say of it at present is that its small oval leaves excel the rest in the pungency of their resinous scent. Of other shrubs there is, so far, little to report, for the many *Berberids* of the region are not in flower yet, and the many *Ribes* are of a dull dowdiness beneath notice. The Honeysuckles are late, and the only bush that has caught my attention has been a very pretty, straggly-habited Cherry, with single, pearl-pink flowers, as it were, pendulous from the flattened sprays.

Of small fry, however, there is already a good beginning. The rocky outcrop just above the house is actually pink with *Androsace tibetica* (see fig. 127), whose real colour I now discover for the first time with horror, having always believed it was white, and having, I fear, led other people to think so too. According to Purdom, indeed, it can be seen white from afar on the hills above Minchow; but here, at all events, the prevalent form is pink, as pink as it can well be, and very often a good deal *too* pink, in a wrong tone, though one always melts to its charm again when one sees it sprinkled close and dense over the lawns or fine grass, or flapping in taller form from the crevices of rocks on the wayside, or pouring over open shingly banks in such a habit and such profusion and such a colour that from a few yards away you could swear you had come on fine curtains of *Saxifraga oppositifolia*. With it, here, grow a dingy *Thalictrum*, a dainty, white-flowered thing like *Isopyrum thalicroides*, a pleasant bright golden Violet, and a Mazus hugging the ground with blossoms of richest purple. This is most likely the same as occupies so much of the land about Choni; and, indeed, I must be prepared this year (and so must everybody else) for many a repetition of what last year revealed to me as a glorious novelty. I am not certain, though, about the *Lloydia* that hangs so freely from the cliffs, and which I believe to be *L. tibetica*. In the Siku-Satani ranges it was much sparser and more ungetatable, and, I cannot help fancying, more pendulous. Here it riots in the most massive abundance on all the rock faces, is profuse in flower, with three or four to the stem, and erect in capsule. Many people may find it not sufficiently "striking" for their taste; to me its fairy-like bells are of quite special charm, as they swing and float like glassy bubbles along the stern lines of the stone, the thinly-touched streak of mahogany down the outside of each segment contributing a curious look of elfin transparency to its already elfin grace.



[Photograph by Reginald Farrer.]

FIG. 125.—MR. FARRER'S MID-SIZED RHODODENDRON, WITH LAVENDER-PURPLE FLOWERS.

size is a better first than a large one devoid of colour.

IMPORTED AND ENGLISH APPLES.

American Baldwins, which are almost flavourless and juiceless when cooked, have been selling in Covent Garden at 1s. 6d. a bushel more than the best English Bramley's Seedling or Newton Wonder, vastly superior Apples. This is not because of better grading and packing; for the best English Apples are graded and packed well, and are much less bruised than are the American Apples in barrels; consumers, as a rule, are not discriminating in respect of quality of fruit, as they judge from size and appearance. For that matter, however, Bramleys are bigger than Baldwins, and Newtons are handsomer. Retail fruiterers might with advantage assure their customers of the superiority of English over imported Apples. *A Southern Grower.*

dred yards across; behind the house rises a steep, south-facing ridge beset with aromatic Cypress, while on the cool, northerly slope across the habbling beck just opposite (from which the discerning will have gathered that here Wolvesden runs east and west) there rises up and up, in wall over wall, a dense scrub of Rhododendrons, studded with here and there a small green Spruce. Peering down from the enormous height above impends a snow-streaked precipice, which in point of fact is but the last and lowest flying buttress of the still-sleeping mountain mass above. The floor of the valley is of loess, and carpeted with Iris; the wide river-shingles hold purple *Oxytropids* and strayed tussocks of a gleaming *Draba* of the

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26, October 17 and 31, November 14 and 28, 1914, January 2, February 27, March 20, April 10 and 24, May 1, 15 and 29, June 12 and 19, July 3 and 10, and November 13, 20 and 27, 1915.

In the Southerly Valley, just over the banks, the turf about the beck is filled with golden *Trollius pumilus*, as bright and gleaming a beauty as anyone could desire. I cannot say quite as much for a neighbour, which I believe to be *Adonis coerulea*. The name is of most alluring promise; the performance proves it not only a flattery but a lie. For this *Adonis coerulea*, if so it be, fluctuates in tones of lilac to a deep satiny-purple. *Adonis purpurea*, as a name, would do it no wrong; and, when you get a good dwarf clump, well set with good-sized flowers, its glistening charm is quite appreciable. But the foliage is lush and ferny; and, on the smallest encouragement, spreads out this way and that, quite overpowering the comparative smallness of the blossom. It is quite otherwise with the *Incarvillea* (see fig. 123), locally abounding on some of these loess banks, to which I resolutely refuse to give a name, not having extricated myself yet from the welter of confusion that in my mind envelops the various novelties proclaimed successively as *I. grandiflora*, *I. compacta*, *I. brevipes* and *I. Bonvaletii*. Suffice it to say that this is a plant of monocarpic habit, with a splayed-out rosette of foliage, on which, close to the ground, appear the glowing great *Dipladenia*-like flowers in May, soon rising to a scape of 3-6 inches, which, by seed-time, is a foot or so in height, carrying three or four of the long and crowded pods. It is probably the same that I collected on Thundercrown, and probably the same of which I got seed on Monk Mountain. Anyhow, it is a curiously striking thing to see up here in these bare Spartan places at these gaunt altitudes—so tropical-looking, so floppy and flimsy, so gorgeous and so gigantic in flower that it hardly seems native to such a height as this, which the aneroid persists in estimating at 11,400. One's heart, indeed, and one's ears, do seem to testify that this estimate is not so far out; so does the vegetation, so do the heights above, and the depths beneath, and the snail-like advance of spring, and the daily storms of hail and thunder that diversify every afternoon with sleet or snow, even as they did at the same height on Thundercrown. But aneroids are sycophantic things; they and all their like are to me the most tricksome of black magic; I believe their answers, like a palmist's, correspond only to one's secret wishes and hopes.

Reginald Farrer.

THE ROSARY.

THREE WICHURAIANA ROSES.

THERE are three hybrid *Wichuraiana* Roses which, though distinct, somewhat resemble one another. These are *Gardenia* (Manda, 1899), *Albéric Barbier* (Barbier, 1900) and *François Foucard* (Barbier, 1902). They were all obtained from a cross between *R. Wichuraiana* and a *Tea* or *Noisette*, the second parent being in the case of *Gardenia* the *Tea* Rose *Perle des Jardins*, of *Albéric Barbier* the *Tea* Rose *Shirley Hibberd*, and of *François Foucard* the *Noisette* *L'Idéale*. All three have good lasting foliage, but while that of *Albéric Barbier* is glossy and shining, in the case of the other two it is rather dull, that of *Gardenia* being slightly larger than the foliage of *François Foucard*; but it is difficult to distinguish these two Roses by the foliage alone.

The colour of the flowers is amber-yellow to yellowish-white. It is deepest in *Gardenia*, which in early summer is often a bright yellow, and the outside of the buds is more or less heavily splashed or streaked with carmine, this splashing being less noticeable in the other two. The open flowers of *Gardenia* and *Albéric Barbier* are generally rather better formed than those of *François Foucard*, which perhaps suffers more from the weather. In continuity of flowering there is a considerable differ-

ence between these three Roses. After its first flowering is over *Gardenia* practically does not flower again; an adventitious flower may occasionally be seen just as it may be seen on *R. altaica*, but there is no real second flowering. *Albéric Barbier* always gives us a few autumn flowers; but they are not many. *François Foucard* is practically continuous from early or mid-June until November, and at the end of the first week of November I still found a few flowers opening and in bud. After July the number of flowers is not so great as in the summer, but it seems never to be without them. It is possible that the correspondent who a few weeks ago referred in this journal to the continuous flowering of *Gardenia* must be growing the plant I have under the name of *François Foucard*. *White Rose*.



[Photograph by Reginald Farrer.

FIG. 126.—MR. REGINALD FARRER'S EXPLORATIONS: DWARF RHODODENDRON WITH LAVENDER-BLUE FLOWERS.

(See p. 358.)

NOTICES OF BOOKS.

MY GARDEN IN AUTUMN AND WINTER.*

WITH the completion of this volume Mr. Bowles brings to a conclusion the trilogy of his garden, and we who have witnessed admirably the progress of this work may be allowed to congratulate both author and public on a noteworthy achievement and acquisition.

It is inevitable that before we proceed to discuss the substance of this work some comment should be passed on its shadow; that is to say the play of verbal light and shade which creates the style of the book.

It is a curious fact that the influence of early-Victorian novelists and essayists should survive in the garden literature of the present century. The exuberant joviality, the facetious allusion, the bizarre metaphor, those coruscating ornaments of the writings loved or tolerated by our grandparents, have ceased to illuminate the pages of all save books on gardening. We trust that we are displaying no ultra-modernity by expressing the hope that these literary manner-

isms of an earlier day may presently fade even from the pages of books on gardening.

For our part, we feel that the little illustrative story, the whimsical allusion and the humorous metaphor with which Mr. Bowles' pages abound do not add to but detract from the style of his book. He is a delightful companion, full of knowledge and love of created things. We are charmed and delighted to walk with him in his garden, and to listen to his discourse, to enjoy the "sweetness and light"; but we prefer the grave peacefulness and quiet urbanity of his ordinary converse of gardens to the jestlets and storyettes with which his sense of hospitality compels him to regale us. They are the serpent in Mr. Bowles' Garden of Eden.

We believe, sincerely, that if the author were to jettison these entirely unnecessary and very heavy "supercargoes," his works would not only win a wider public, but would also, becoming classics, be read with no less pleasure and instruction by subsequent generations of gardeners. For they contain a full measure of valuable and unique information. These books are not, as are so many others, exercises in conveying information from this or that authority. They are a record of the observations and experiences of a great gardener. Mr. Bowles knows plants in a way given to but few of his contemporaries. His powers of observation are acute, and he has the gift of telling us those things which we have so long wanted to know. In illustration of the justice of this high praise, let us consider one chapter—that on Autumn Crocuses—of the present volume. It provides us with a little garden monograph of the chief species which we ourselves might cultivate, and gives us their horticultural values so surely that we may go forth into our own gardens, and whilst deploring our foolishness in not possessing ourselves of some of these autumn flowers, pick out the sites on which they are to flourish in the autumns yet to come. For Mr. Bowles has this precious grace, that he refrains from offering—and thereby compels us to take—advice. It cannot be said of his teaching what the immortal Jane said of teaching in general, "We are all fond of imparting instruction, but we can only teach what is not worth knowing." Furthermore, even after the severely practical gardener has garnered in the rich harvest of useful information, the pages are by no means bare; there remain rich gleanings for the philosophically-minded gardener and for the botanist. There is scarcely a page that does not contain a suggestive observation, or a curious fact that requires elucidation. Indeed, if botanists as a class were not so prepossessed by the routine of their craft, they could gather at any time of the year a whole crop of problems for investigation from Mr. Bowles' garden.

For this volume, even more than for its predecessors, gardeners have reason to be grateful, especially these, and they are many, who are accustomed to look upon the garden as "over" as soon as summer has gone, and the regular autumn "arborescence"—as our own gardener calls them in a fashion which will appeal to Mr. Bowles—have died down. They may take heart of grace and know that with the passing of the *Asters* and *Heleniums*, the *Solidagos* and *Chrysanthemums*, the glory of the garden may yet abide with them if they will but learn from this all-the-year-round gardener what herbs and shrubs and trees to plant for autumn and winter effects.

The volume, like its predecessors, is well illustrated with both black and white and coloured plates and is admirably printed. Mr. Bowles' objects in writing these volumes are set forth admirably in his concluding sentences: "I only wish . . . to encourage others . . . to collect and grow plants of all kinds, to watch and note their peculiarities, mark their charms, and hand on the best of them to others who love a plant for its own sake." We congratulate Mr. Bowles on the success with which he has achieved these objects. A. V.

* *My Garden in Autumn and Winter*. By E. A. Bowles, M.A. (T. C. and E. C. Jack.) London, 1915. Price 5s.

ORCHID NOTES AND CLEANINGS.

HYBRID ORCHID COLOUR VARIATION.

AN interesting case bearing on colour variation, as noted in *Gard. Chron.*, November 27, p. 330, and some former issues, is given by the flowering of two examples of *Laelio-Cattleya* Hector (*Dowiana aurea* × *Martinetii*) in Mrs. Bischoffsheim's gardens at The Warren House, Stanmore. The two plants bear flowers very dissimilar in colour, especially in the arrangement of the yellow in the lip, one specimen showing very little of that colour.

The other has an inflorescence of two blooms, each flower very different from the other, although on the same spike. The ground colour of the lip in both is purplish-rose, the remarkable variation being in the disposal of the yellow, one having it in veining from the base to the centre, and the other slight veining but broad patches of yellow on each side of the tube, the patches being connected in the middle. Thus the plan of the colouring of one of the flowers is like that of *C. Dowiana aurea*, while the other closely resembles *C. Warscewiczii* in the yellow patches and disc of the lip. The first arrangement is easy to understand, but how *C. Martinetii* (*C. Mossiae* × *L. tenebrosa*), [neither of whose parents might be expected to influence the cross in the matter of the large yellow central area] could produce such results when used with *C. Dowiana aurea* is a more difficult problem to solve, especially with such dissimilarity between the two flowers on the same spike.

Erratic disposal of the colours of flowers on the same plant has been noted before. On one occasion we remarked on an inflorescence of *C. Dowiana aurea* on all the flowers of which the yellow colour was differently arranged.

Variation in hybrids of the same hatch, each of which is constant in its characters, is highly interesting, but plants with totally dissimilar flowers on the same spike suggest several additional points.

For example, would there be a marked difference in the progeny if both the flowers were fertilised with the pollen of the same flower used in crossing?

By what means do the forces governing colour development bring about such a difference in a twin-flowered inflorescence? Many more questions suggest themselves, but in colour-development in flowers, as in every operation in nature, there are many mysteries which cannot readily be explained, but which are very interesting to study.

The flowers remarked on, being blooms of a regular and normal pattern of colour, do not fall into the same class as the bizarre or flaked flowers, which are often accounted for by colour suppression in parts of the flower rather than by colour production in the flaked parts. In such a case there are never two flowers exactly alike, and they may be normal or differently coloured when next the plant blooms.

With regard to the appearance of the features of *Cattleya Warscewiczii* in one of the flowers, it may be suggested that the *C. Dowiana aurea* used was not a typical form, but probably a reversion from *C. Hardyana* (*Dowiana aurea* × *Warscewiczii*). The variability of *C. Dowiana aurea* in some importations (see *Gard. Chron.*, October 30, 1897, p. 212, and November 2, 1901, p. 318) seems to suggest a possibility in that direction, although it throws no light on the point as to why one of the flowers on the spike should resemble typical *C. Dowiana aurea* and the other have a labellum like that of *C. Warscewiczii*. Both grow together, however, and through natural hybridisation produced *C. Hardyana*. It is quite possible that in the remote past the two have had a common ancestry.

GARDENING FOR WOMEN.*

I INTEND to deal with trained gardeners, not those many women who—without perhaps being adepts in growing and planting—have yet by their taste and love of flowers created beautiful gardens. For women, though only recently recognised as professional gardeners (to be exact, since 1892, when Swanley College first opened its doors to them), have always loved and tended plants. Qualities which specially fit women for this work are a love of nature, good taste, patience and perseverance—especially in little details—deftness of touch and quickness of thought and observation.

Why should women be gardeners? Perhaps the most important reason is that the woman gardener chooses her profession because she loves the work. She does not as a rule start her training until she is 17 or 18—often later; by that time she should know her own mind, and has also probably done a certain amount of work as an amateur. The home training, too, will have taught her neatness, order and economy; a knowledge of what is wanted in the kitchen cannot be anything but helpful, and if she is fond of flowers she will have had the chance of learning how to arrange them.



[Photograph by Reginald Farrer.

FIG. 127.—*ANDROSACE TIBETICA* GROWING WILD IN CHINA: FLOWERS PINK. (See p. 358.)

It is said that women have not the physical strength necessary for the heavy work, but they have more strength than they are credited with, and they have endurance, and forethought and common sense. Besides, strength comes with practice, and a moderate amount of it, combined with common sense, and pleasure in one's work, will lighten labour.

One thing which may perhaps account for women having taken up gardening professionally is the fact that they are attracted by the country life. For many years now life has been drawn more and more to the towns, where conditions get more complex and difficult and artificial. Women, who, on the whole, are quicker in their perceptions than men, and less creatures of habit, have felt the strain, and they long to get away to simpler and more natural conditions. The life is not monotonous to those who understand it, but full of change with the varying seasons and the different work the seasons bring. A money value cannot be put on these things, but to women who prefer the country to town life, and to whom a rural career, even if attended by a reduction in income, would be preferable to more highly paid but un-

congenial work in town lodgings and private situations, the advantages are priceless.

Another qualification with which the woman gardener is generally equipped is ambition. She does not enter the profession with the idea of remaining a working gardener all her life, but she hopes, after an adequate amount of practice, to direct the work of others. A woman cannot compete with a man in strength, so that, to be as profitable to her employers, she must make up for it by other qualities.

In the question of training, the woman gardener meets her first difficulty. She cannot—at present at any rate—start at 14 as a boy does sometimes, and get in return for a small salary a thorough practical grounding in the calling. She has to wait till she is 17 or 18 for any of the gardening training centres to be open to her, and instead of having a foundation of practice she starts with a combination of practice and theory. For this, as a rule, she has to pay, instead of being paid.

The course at Swanley is planned to last for two years, at the end of which time a student qualifies for certificate or diploma for practical and theoretical efficiency. The time is fairly evenly divided between garden work and study, the hours getting gradually longer as the student gets accustomed to the conditions. The grounds are divided into departments, vegetables (on market lines), kitchen garden with trained fruit trees, flower garden, plantations, market and plant houses and French garden; and the students are arranged in gangs and go to each department in turn for half a week at a time. In between the visits to a particular department, students may follow what is going on there by observations in their free time, besides what they learn by the weekly and daily operations. Each Monday a list of the work to be done during the week is posted up, and each evening the student is supposed to go round and note what has been done during the day, so that there is no excuse for not knowing what is going on.

At first the work is mainly out-of-doors, learning the use of tools. During the second year each student gets a charge lasting for six weeks. This means that she is entrusted with the routine work of a particular plant or market house. She has also to keep a diary of garden work, which must be sent in each term to be corrected and marked. Then there are lectures to attend, horticulture, horticultural science, chemistry, botany, entomology, a course of commercial book-keeping, surveying, two extra subjects (students can choose between poultry, dairy and bees, practical and lectures), besides practical experience in fruit and vegetable preserving, packing and marketing. To obtain a diploma the student must have given satisfaction in practical work, have attended the lectures and passed examinations in practical work.

Having got so far, the student should be ready to go out in the world and gain experience. And here the woman gardener meets another difficulty. It is not easy for her to specialise—there have, so far, been very few under-gardeners' posts available, and very few nurseries where she could be taken on as improver. Therefore, unless she is very fortunate, she has to learn her private work in a small post, as single-handed gardener, either with or without help. We hear of many openings for "head gardeners," but more often than not they are practically single-handed, with only the help of a man on whom the house has first call. If a woman desires to go in for market work, unless she can get in with women who have already started she probably has to commence in a small way herself.

In spite of these drawbacks, however, women do become "heads," and also manage to run successful market gardens.

(To be concluded.)

* A paper read before the Kew Gardeners' Debating Society by Miss L. H. Joshua.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LVII).

LA DÉNOMINATION DES ROSES D'ORIGINE ALLEMANDE.

Nous avons exposé déjà différentes opinions exprimées en ce qui concerne l'attitude à adopter vis à vis des Roses à nom allemand. Alors que dans certains milieux on a vivement combattu tout changement de noms, qu'ils soient allemands, français ou anglais, et cela à raison précisément des difficultés auxquelles donnait lieu la multiplicité des synonymes, dans d'autres on poursuit la disparition de tout ce qui est d'origine ennemie.

La question de la proscription est certes complexe. De nombreuses variétés peuvent disparaître sans grand inconvénient, certaines autres cependant se sont imposées par leurs qualités et leur suppression entraînerait incontestablement des difficultés.

Le Comité des Roses de la Société Nationale d'Horticulture de France a, on se le rappelle, fait un travail préliminaire de classement des variétés allemandes, les unes à conserver, les autres à changer de nom, les dernières à soumettre à une étude ultérieure avant de prendre une décision quant à leur sort.

M. Turbat propose une mesure radicale. Il demande que les roséristes français se mettent d'accord pour supprimer simplement, dans les plantations françaises, toutes les variétés de Roses d'origine allemande ou autrichienne ou à consonnance allemande. Il ne cache cependant pas que la suppression de certaines variétés dans les pépinières pourrait être de nature à nuire au commerce avec les neutres qui n'ont pas les mêmes raisons pour boycotter les produits allemands. Aussi admet-il qu'en vue de leurs envois en pays neutre, les roséristes français aient le droit de conserver sur leurs catalogues d'exportation les quelques variétés d'origine on à nom allemand, qui sont demandées par leur clientèle étrangère.

Pour le reste M. Turbat est, d'une façon générale, adversaire des traductions de noms et cela conformément aux vœux émis précédemment par l'Union Horticole Professionnelle Internationale.

On peut se demander si le maintien en culture de variétés destinées à l'exportation ne les ramènera pas naturellement sur le marché intérieur d'où on les proscriit, mais où ces mêmes variétés étaient appréciées avant la guerre, car les Roses allemandes demandées en France par les acheteurs étrangers, sont aussi cultivées pour la clientèle française.

Un *Versaillais* écrivant au *Jardin*, se déclare également adversaire de tout changement de nom. Tout en appréciant les sentiments qui font agir les partisans du mouvement mis sur pied, il estime qu'il convient de rester fidèle aux décisions prises lors des Congrès internationaux. Il y avait été admis que le seul nom qui doit être donné à une plante est celui qu'elle a reçu de son auteur. Ce nom doit être conservé dans sa langue d'origine et ne doit pas être traduit, sous peine d'établir des confusions. Il s'appuie sur des précédents et sur les résultats qu'aurait le changement de noms si de France le mouvement s'étendait à des pays neutres qui, forts de d'exemple donné, pourraient aisément débaptiser les Roses obtenues en France.

Il conclut que si on cultive des Roses allemandes, il faut les maintenir franchement sous leur véritable nom, mais il se déclare partisan de la proposition de M. Gravereaux, le rosériste de l'Hay, qui demande la suppression complète, des collections et des catalogues, de toutes les

Roses allemandes, y compris celles cultivées couramment pour le commerce. Celles-ci ne s'élèvent d'ailleurs qu'à une demi-douzaine au maximum.

Dans sa séance du 14 octobre dernier, le Conseil de la Société Nationale d'Horticulture de France s'occupa à son tour de la question et adopta la résolution suivante : "Suppression pure et simple, dans les cultures et sur les catalogues, de toutes les variétés de plantes d'origine austro-allemande."

La résolution du Conseil ne s'appliquait donc pas seulement aux Roses, mais à toutes les espèces pour lesquelles des variétés ont été lancées en Allemagne. Cette généralisation est logique, et si les discussions ont spécialement porté sur les Roses, cela provient de ce que l'Allemagne a surtout été féconde pour cette espèce.

L'autre solution, celle qui consisterait dans le maintien des variétés allemandes de mérite, tout en leur donnant un nouveau nom, a été discutée ultérieurement au sein du Comité d'administration de la Société française des Roséristes. On a été d'avis que semblable mesure n'est pas recommandable parce qu'elle serait inopérante. Il a été prouvé en effet par des exemples qu'un nom une fois lancé, il est impossible de le faire disparaître complètement. Quoi que l'on fasse, le nom primitif continue à être employé. Il en résulterait les difficultés commerciales et les fraudes inévitables en cas de dénominations multiples pour une même variété. Ces considérations ont fait approuver les propositions suivantes :

"(1) Suppression pure et simple de la multiplicité des variétés allemandes non méritantes.

"(2) Maintien des bonnes variétés.

"Le Comité ne croit pas que des changements de noms soient possibles."

Voilà une solution qui paraît devoir rallier tous les suffrages. Elle donnera satisfaction à peu près absolue à la demande de boycottage et n'enfreint pas les principes établis par les congrès internationaux.

NOUVELLES DIVERSES.

NOUVELLES DE LA GUERRE.—Le dernier numéro du *Jardin* nous apporte des nouvelles de différents horticulteurs mobilisés.

M. Alfred Nombrot a été cité à l'ordre du jour avec croix de guerre. Il est en outre promu chef de bataillon.

Le capitaine Henri Boucher a également été l'objet d'une citation.

Parmi les blessés figurent le fils de M. Achille Magnien et celui de M. A. Nonin.

Le fils de M. Juhel, jardinier principal de la ville de Paris, est tombé au champ d'honneur.

L'HORTICULTURE ET L'APPROVISIONNEMENT DES BELLIGÉRANTS.—Jusqu'à présent l'horticulture semblait surtout intéressée à la contrebande en ce que les produits maraîchers dont l'exportation des pays neutres vers l'Allemagne est autorisée, servaient de couverture à du matériel de guerre ou à des articles de première nécessité pour les armées. Des envois de légumes, de fruits et même de plantes ont été saisis dans ces conditions.

Les journaux nous apprennent maintenant qu'un bateau entier de fèves a été arrêté dans les eaux suédoises. Le chargement avait été autorisé pour la Suède, mais le bateau devait, est-il prétendu, être saisi par un navire de guerre allemand.

Les prix élevés payés par l'armurerie allemande

pour le bois de Noyer engageaient beaucoup d'exploitants hollandais à abattre leurs arbres, compromettant ainsi pour une longue période la production des noix. Le Gouvernement néerlandais s'est vu dans la nécessité d'interdire l'exportation. La mesure n'est cependant pas applicable aux plants n'ayant pas trois mètres de tige.

L'exportation des semences de Pois, Haricots et Fèves est également interdite par arrêté ministériel du 26 novembre. Pour quelques espèces, des permis seront accordés à des exportateurs notablement connus comme tels, à la condition que pour 500 kilos de graines exportées, ils en fournissent 200, appartenant à d'autres espèces, pour la consommation dans le pays même.

LES PRODUITS FRANÇAIS À LONDRES.—Le envois de fruits et légumes de France se font assez difficilement. Les compagnies se trouvent toujours dans l'impossibilité d'accepter le matériel d'emballage pour le retour. Aussi les expéditeurs sont-ils forcés de limiter les envois, car ils ne peuvent pas faire façonner de nouveaux cageots.

Les Asperges vertes en petites bottes se vendent jusqu'à 2 sh. 6. Les pointes de rebut 4 sh. 6 la douzaine. Les Poires de luxe sont rares. Il arrive des Pommes Reinette Grise de la région d'Angers, en emballage perdu. On les paie 30 shellings environ les 100 kilos.

Les fleurs du Littoral expédiées en paniers de Nice, non à retourner souffrent moins de la pénurie de matériel.

LES COURS DES LÉGUMES À PARIS.—Les cours maxima des légumes arrêtés récemment furent comme suit : Légumes secs : Haricots blancs, 1 fr. 15 et 1 fr. 20 le kilo, ou 0 fr. 95 le litre; Soissons, 1 fr. 20 à 1 fr. 30 le kilo, ou 1 fr. à 1 fr. 05 de litre; Pois cassés, 1 fr. 60 à 1 fr. 80 le kilo, ou 1 fr. 30 à 1 fr. 45 le litre. Pommes de terre : Hollande, 0 fr. 25 à 0 fr. 30 le kilo; Sancisse, 0 fr. 25; Pomme de terre ronde, 0 fr. 20. Il y a des plaintes au sujet de ces derniers prix qu'on trouve exagérés, la quantité de Pommes de terre disponibles étant considérable.

Le Préfet de police va rendre une ordonnance qui dans son esprit doit donner le coup de grâce aux regrattiers. Les approvisionneurs vendant sur le carreau des Halles Centrales auront à vendre eux mêmes leurs marchandises et à produire un certificat spécial d'origine.

KORT OVERZICHT VOOR DE VLAMINGEN.

In Frankrijk heeft men veel aandacht geleeend aan de beweging op touw gezet om de Rozen met Duitschen naam van de markt te verwijderen. Enkelen verlangen dat geen Deutsche Roos in Frankrijk gekweekt worde, anderen willen wel de meest befaamde toelaten doch mits haar een nieuwen naam te geven.

Deze oplossing wordt bekampt, in naam der beslissingen vroeger met algemeene goedkeuring op de internationale Tsinbouwdagen genomen, als zijnde van aard om heel wat verwarring in den handel te brengen. Ook bestaat een laatste voorstel, dat er vermoedelijk door komt, in het verwijderen der gewone Deutsche variëteiten en het behouden onder hun oorspronkelijken naam, van deze die zich door hunne hoedanigheden opgedrongen hebben.

Fransch goed komt voor 't oogenblik nog al lastig in Londen aan, daar geen inpakgoed kan teruggezonden worden.

The Week's Work.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

PINES.—From now on till the end of February Pines in all stages of growth will require careful attention. High temperatures during frosty weather must be avoided, as causing undue excitement to the plants. Watering must be carefully done; examine the plants once a week, and give water if required; it should always be about the same temperature as the house. Plants which are swelling their fruits should be grown in a temperature a few degrees higher than the others. During bright, sunny days, the walls and paths should be frequently damped. A house should be kept ready to receive the earlier batch of Queen Pines intended to fruit in June. If possible a small pit should be entirely devoted to these. In filling the house, preference should be given to the most forward and promising plants. During dull, sunless days give the plants the benefit of all the light possible; it will be advantageous to have the outside roof-glass washed now and then.

THE ORCHARD HOUSE.—During spells of inclement weather, when out-of-door work is at a standstill, opportunity should be taken to have the woodwork of the houses thoroughly cleansed, and to push forward the pruning and training of permanently planted trees. Root-pruning is, of course, better done earlier in the season, but if any of the trees have developed extra strong shoots, it will be well to have this attended to now. Whether any of the trees have been disturbed at the roots or not, the opportunity should be taken now to introduce some fresh soil into the borders. The amount of old soil to be removed from the surface must be determined by the position of the roots; it should be replaced by a moderately rich compost. Any of the trees that have been disturbed may require water to settle the soil amongst the roots. Otherwise, under normal conditions, no water should be required until the trees are started.

TOMATOS.—A little judicious feeding either with a fertiliser or liquid manure will materially assist in keeping active the roots of plants that are swelling their fruits. As roots appear on the surface, a slight top-dressing of soil should be given. The plants, however, must not be coddled, and a dry, buoyant atmosphere should be maintained, admitting air when the weather permits. Plants coming on for early supplies must be kept growing, and given a position where they will obtain the maximum of light. Water must be applied with care, and the plants kept away from draughts.

THE ORCHID HOUSES.

By T. W. BRISCOE, Gardener to W. R. LYSAGHT, Esq., Castletief, Chepstow, Gloucestershire.

MEXICAN LAELIAS.—*L. anceps* and its numerous varieties—*L. autumnalis* and its variety *alba*, the beautiful *L. Gouldiana*, *L. furacea*, *L. albida* and *L. Eyermaniana*—are valuable winter-flowering plants. When the plants have passed the flowering stage, allow them a long period of rest in a very light house where the atmosphere is dry. An average temperature of 50° will suffice until growth begins. Open the ventilators more or less according to the weather. Only enough water should be afforded the roots during the resting season to keep the pseudo-bulbs and leaves in a normal condition. The white forms of *Laelia anceps*, such as *Williamsii*, *Stella*, *Schroederiana*, *Dawsoni* and *Sanderiana*, usually flower later than the type, and are rarely at their best stage of blooming until after Christmas. When the spikes are removed the plants should be rested, just as advised for the coloured varieties. Specimens that are not flowering will produce a batch of roots from the base of the new pseudo-bulbs, and if the plants require re-potting the work should be done at once. Teak-wood baskets or pans provide the best receptacles, and ample drainage material

should be used. The compost may consist of *Osmunda* or *Al* fibre, with a sprinkling of *Sphagnum*-moss in the last layer of the mixture. Plants that are disturbed should remain in their growing quarters, and be given only sufficient water to encourage the roots to enter the compost.

TRICHOPIILIA.—*T. suavis* is the finest garden species of this genus, and is extensively cultivated. *T. Backhouseana*, *T. coccinea*, *T. fragrans* and *T. tortilis* are also worthy of cultivation. The *Trichopilias* flower at different periods of the year, and re-potting should be done when the current growth is partly developed. The pots or pans should be filled one-half of their depth with material for drainage. The rooting medium may consist of *Osmunda*-fibre, peat and *Sphagnum*-moss in equal parts. Care in watering is necessary at all times; the roots need most moisture when they are growing freely, but directly the pseudo-bulbs are completed very little water should be applied to them. The plants may either be grown on the stage or suspended from the rafters of the intermediate house; *T. fragrans* and the variety *nobilis* will thrive in the cool or *Odontoglossum* division. When re-potting, examine each plant for the presence of scale insects around the pseudo-bulbs, and if any are detected destroy them with a weak insecticide. With the exception of scale, few insects infest *Trichopilias*.

MASDEVALLIA TOVARENSIS.—This species is now pushing up its flower-spikes, and its pure white flowers will soon expand if the plants are given a few degrees more warmth than that prevailing in the cool house. Careful watering is essential during the winter months, but as *Masdevallias* have no pseudo-bulbs, the compost must always be kept more or less moist, according to the state of growth and condition of the roots.

DENDROBIUM.—A few of the early-flowering *Dendrobiums*, such as *D. aureum*, *D. Cassiope*, *D. endocharis*, *D. Wardianum*, *D. Ainsworthii*, and other hybrids, will be pushing out their flower-buds on the side of the pseudo-bulbs, and such plants may be introduced into a few degrees more warmth. The Cattleya house or the warm end of the intermediate division will suit them admirably until the blooms are nearly developed, when they can be removed to a light position in the warm house to attain maturity. Where many are cultivated, and it is desired to maintain a succession of bloom, the plants should be looked over at fortnightly intervals, and the more forward examples selected and treated as advised above. *Dendrobiums* showing signs of flowering at this season must never be placed in a high temperature at once; the process must be gradual, or the buds may decay, and the plants begin to grow. Care must be taken not to over-water the plants; only sufficient moisture should be given to maintain the pseudo-bulbs in a plump and rigid condition. The majority of the plants should be kept in their resting quarters until the New Year, when the increased light will be beneficial to the plants, and the blooms will be firmer in texture, while the various colours are also more highly developed. *D. Brymerianum*, *D. fimbriatum*, and others belonging to this group must be kept in a warm house and liberally supplied with water until the growths are developed.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

FIG TREES ON WALLS.—Unless the district is warm naturally, the trees should be protected by covering the branches and stems with dry Bracken Fern, mats, or other suitable material, to save the first crop of fruit for next year. Trees that have made coarse growths are more likely to suffer harm from frost than those with shoots of moderate growth, for the latter are always better ripened and able to resist extreme cold.

WALL-TREES.—Continue to plant and fill vacancies amongst wall trees until very cold weather renders the work impracticable. Trees that are unproductive or in any way unsatisfactory should be carefully examined, and if

deemed necessary lifted, the drainage made perfect, favourable soil added to the border, and the trees replanted. It is preferable in every respect to do this work now, rather than defer it until the spring. Take advantage of every favourable opportunity to forward the work of pruning and nailing both Pears and Plums, and also, if needs be, to dress the trees with an insecticide.

ORCHARD TREES.—The pruning of these, whether of standard or bush form, should now be begun. Trees that have been carefully trained for several years, and are in fruiting condition, will not require much attention beyond the removal of a shoot or branch here and there, but standard trees that have not been regularly pruned may require a good deal of pruning. Remove all shoots or branches that cross each other, and thin any that are overcrowded, particularly in the centre of the tree, which should be kept well open. Shorten and thin the spurs, retaining the plumpiest and best buds. When these are near the base, or origin of the spur, they should be retained in preference to buds nearer the end. The object in view should be to retain the buds close to the base of the spurs, and to keep them at proper distances apart, so that sun and air may be freely admitted. The results of this mode of treatment will be manifest after a season or two in more regular crops of fruit of superior quality. Pears grown on the Pear stock are best for orchard standard trees, but the Quince stock is, on most soils, the most suitable for bush or pyramid trees; they occupy little space and bear abundantly. A good coating of half-rotten manure should be spread over the roots of newly planted trees, and the stems made secure to stakes.

THE FRUIT ROOM.—Notwithstanding the prevalence of favourable weather during the past season for both Apples and Pears, the fruit is not keeping well. It is therefore necessary that the fruit be frequently examined, and mouldy or decaying specimens removed. Keep the atmosphere of the room as fresh and buoyant as possible by the free admission of air in favourable weather.

MULBERRIES.—The Black Mulberry is the variety usually cultivated in the garden as a standard tree. Mulberries are sometimes planted against a wall, where they produce great quantities of superior fruit, and extend their branches to a great distance. Where the situation is favourable they form very ornamental trees for a lawn, and afford good crops of fruit. During lifting or planting operations, care should be taken to damage the fleshy roots as little as possible, pruning back those that may already have been bruised before completing the planting.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warton Priory, Yorkshire.

STEPHANOTIS FLORIBUNDA.—The present is a good time to cut out weak and superfluous growths from *Stephanotis*, and to cleanse the plants generally for next season. Where *Stephanotis* is grown in pots it does not always flower satisfactorily. This may arise from various causes; it is often due to the plants not having a proper rest, for when they are always growing more or less they make a lot of weak shoots, with the result that they do not flower freely. The roots should be kept on the dry side during the winter, and the temperature should be 55° to 60°.

PELARGONIUM.—Keep plants of Zonal *Pelargoniums* in a light house with a night temperature of 55°, when they will make a brilliant display and last a long time in flower.

VIOLETS.—To be successful with these plants they must be given plenty of fresh air, and protected from frost. It is a mistake to imagine that Violets can be hastened into flower by growing them in a close, warm atmosphere; no greater mistake can be made. Too much warmth in the pit or frame promotes the growth of leaves rather than flowers, causes the foliage to be weak and susceptible to damping and mildew. Let the plants have plenty of air whenever the weather permits. Violets properly treated will withstand a moderate amount of frost, make sturdy

growth, and produce an abundance of flowers. But too much cold is harmful, and in very hard frosts the lights should be covered with mats and litter.

BULBS FOR FORCING.—Since use can be made of Roman Hyacinths, the miniature Dutch Hyacinths, Tulips, and Paper White Narcissus, it is not necessary nor advisable to force large varieties of Hyacinths very early. However, if a few of the large-flowered varieties are required for any special purpose, and are now put into moderate heat, they may be expected to produce well-developed flowers. See that the blanched tops which have been plunged have time enough, under subdued light, to regain their colour before the full light reaches them. Introduce fresh batches of bulbs and flowering shrubs as it becomes necessary, so that there shall be no scarcity of flowers when the Chrysanthemums are over.

EUPHORBIA PULCHERRIMA (POINSETTIA).—The bracts will soon be at their best, and the plants must be kept in a drier atmosphere than formerly. They should still be given plenty of water at the roots, but no stimulants.

COLEUS THYRSOIDEUS.—This plant requires treatment similar to that given to Poinsettia, and will brighten the conservatory between now and Christmas. Discontinue the use of all stimulants, and keep the roots well moistened with clear water.

CINERARIAS.—The earliest batch of plants will now be on the point of flowering, and should be arranged in a light house, the temperature being regulated according to the time at which they are required to bloom. Continue to feed the plants until they come into bloom, and fumigate twice lightly before the flowers open.

GENERAL INSTRUCTIONS.—In smoky districts the roof glass if not frequently washed soon gets covered with soot and dirt at this season of the year. Give the interior of the houses a thorough cleansing, especially if mealy bug or red spider has been troublesome. Sponge and clean the plants before returning them to the house. At the same time discard unhealthy and worn-out specimens, as these are useless for propagation, and are especially subject to attacks from insects. Avoid a stagnant atmosphere in the houses, especially where Carnations and other plants in flower are grown.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

LILY-OF-THE-VALLEY.—The plants in a bed of Lily-of-the-Valley when once established grow and flower well for years without much care or attention, as may be seen in woods where they grow wild—for example, in certain woods on the Cotswolds. In gardens, the plant is frequently neglected, though both the foliage and flowers are much finer on well-cultivated specimens. After four or five years the plants become overcrowded, and should then be lifted, sorted into sizes, and replanted. It is a good plan to lift a quarter of the bed each year, then a portion of the plot will always be in good order. This system is easily worked when crowns are dug up annually for forcing, and, after the best have been selected for the purpose, the remainder are replanted. In choosing a site for new beds do not select one with a southern aspect, for the plants do not require full exposure to sunshine during the hottest part of the day. Let the ground be dug deeply and manured heavily. If the soil is heavy in texture, mix a quantity of decayed leaves and grit with it. Planting may be done whenever the soil is in a suitable condition. Plant firmly, in rows made 9 inches apart, and allow about 3 inches between the crowns, which should be just below the surface. When the work of planting is completed, cover the bed with a thin layer of leaf-mould. The old beds should be cleared of weeds and decaying foliage. Fork the soil very lightly, and afterwards apply a moderate dressing of well-decayed manure and leaf-mould.

PRUNING CLIMBERS.—Climbers such as Clematis, Wistaria, Akebia, Vitis, Actinidia, summer-blooming Loniceras and Jasmine may be

pruned, cleaned and tied, as time permits. The various types of Clematis require somewhat different treatment. The early-flowering kinds—*C. montana* and *C. patens*—produce their flowers on shoots of the previous season; consequently the new growth should be retained, and the old flowering wood cut out, if this has not been done already. Prune *C. Jackmannii* and its varieties to the base, as these bloom on the new shoots. Wistarias growing in restricted areas may have the lateral shoots spurred back to flower buds, except those required for extension. Climbers grown for their beauty of foliage should be thinned and the shoots spurred back according to the variety and space to be filled. Ivy growing on buildings may be clipped, for there will be greater pressure of work in the spring.

HARDY CHRYSANTHEMUMS.—It is necessary to lift a sufficient number of plants of outdoor flowering Chrysanthemums for propagating purposes. Lay the roots in soil or ashes in a cold frame, and carefully label them.

SHRUBBERIES.—When making new shrubberies it is imperative that the permanent subjects be planted sufficiently far apart to allow for future development. Less important shrubs, Roses or herbaceous plants, are sometimes used to fill the vacant spaces, and it often happens that these supernumeraries are retained too long for the well-being of the future occupants, which should be guarded against. The permanent plants must have constant attention from youth to full development if their full effectiveness is to be obtained. Although freedom of growth is of great importance, a judicious use of the pruning knife is also necessary. Left alone, the plants will probably crowd each other long before they have attained full size, and in time get almost unmanageable. On the other hand, by careful pruning and thinning, the true character of many shrubs and trees can be retained. Light and air are necessary to their well-being. Spring and early summer blooming kinds should have been pruned as advised soon after flowering. If pressure of work prevented this, it can safely be done at any time now, except during severe frost. Late summer and autumn blooming varieties should be left until early spring. When the general overhauling of the shrubbery is completed, the soil should be forked over, and the surroundings tidied up. Take care to fork lightly around surface-rooting subjects. Leaves, instead of being removed, should be forked in, or covered with a scattering of soil to prevent their being blown about.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CARROTS.—If brick pits are available, prepare beds for a crop of early Carrots. Collect fallen tree leaves, and place them together to ferment. Turn the heap several times, and when thoroughly prepared tread the leaves tightly in the pit until the bed is 4 feet in depth. The top layer should consist of 9 inches of rich soil, and when this has settled rake the surface carefully and sow the seeds evenly. Cover the seeds with fine sifted soil to the depth of one inch. If the soil is moist it will need but very little water until the seeds have germinated; use soft water through a very fine rose. Slugs are very fond of young Carrots and must be kept in check. Early Scarlet Horn and Early Gem are good varieties for present sowing.

EARLY POTATOS.—If very early Potatoes are required, the seed tubers should be selected at once and placed in shallow trays with a view to starting them gently into growth. Very little warmth is best, as then the shoots are short and stocky. When the young growth is about half an inch long, plant the tubers carefully on a slightly-heated bed. The soil should be at least 9 inches deep, and if Oak or Beech leaves are available there is no better material for making up the bed, as only a little bottom heat is desirable. Plant in rows made 20 inches apart, and allow a space of 10 inches between the sets in the row. As soon as the shoots are through the surface, ventilate sufficiently to keep the plants sturdy. Tubers for planting early should

be placed singly in trays or on shelves, for it is not desirable to have to remove overgrown shoots before the sets are planted. May Queen is a good variety for planting early; the quality is good, and the crop is very prolific.

ONIONS.—A careful examination of all Onions in store should be made, so that bulbs which are becoming soft or growing out may be removed for immediate use; the remaining bulbs should be given plenty of ventilation, and kept as dry and cool as possible.

THE "FRENCH" GARDEN.

By P. AQUATIAS.

NURSERY BEDS.—The weather of the last fortnight of November was very trying for the seedling Lettuces and Cauliflowers. The plants can withstand a temporary frost, even if it be a severe one, but when the thermometer remains at about freezing point for days together mats must be requisitioned. They should be spread so as to touch the ground on both sides of the bed, and to do this it is necessary to employ two mats that will overlap one another over the middle row of cloches. During the daytime the mats should be removed to allow the light to reach the plants. As soon as the thaw sets in the mats should be removed in the paths running perpendicular to the beds and kept covered. The sheltering of the cloches by mats is a very tedious work, but the labour is well repaid, for it is very difficult to buy Lettuce and Cauliflower plants in the early spring. Frost damages Lettuce in different ways, according to the time of the year. In the seedling stage the collar is affected and turns red; the roots and leaves appear healthy, so much so that many growers would consider them sound. Decay sets in about the end of March, when the plants are three parts grown, and they then damp off all at once. The cause might be attributed at that stage to lack of bottom heat or excess of moisture, but it is due to the continuous frost as stated. During March and April Lettuces grown under glass appear to be immune to injury by frost, and the effects of excessive cold are only noticeable when the sun gets very strong, the leaves then being covered with russet spots. Though Cauliflowers are not so liable to injury by frost the effects of severe cold are more sudden, and especially to strong seedlings. The lights should be covered carefully every night or just before frost turns the glass white.

COLD FRAMES.—As soon as the digging of the ground has been completed the frames should be placed in position, with a path 1 foot wide between the rows. After having broken up with a fork the black soil intended for top-dressing, the material should be placed inside the frames, the amount depending on the quantity at disposal. At least four barrow loads should be allowed to each frame, as upon it depends largely the success of the crops. After the soil has been made level with the rake cover the frames with the lights. Ventilate the frame on every possible opportunity to keep down excessive atmospheric moisture. Soon after Christmas, and preferably on a bright day, remove all the lights and sow seeds of Radish and Carrot Chantenay broadcast. Cover the seeds with an inch of fine, sifted, black soil, and make the surface fairly firm. It is a great advantage to the crops, as well as a boon to the workers, to fill up the paths between the frames with dry manure.

MANURE BEDS.—The black soil should be in a suitable condition for use when the frost is over. It should be ridged up in chains 9 feet wide at the base and 3 feet high, each chain to be perpendicular to the position of every frame forming the first row. The space between each chain of soil should be scraped clean, and, whenever possible, manure brought in, not only to relieve the work of carting manure when building the beds, but by spreading it over the black soil to give shelter from either frost or heavy rains. All the frames used for hot-beds should be overhauled and put in good repair. Stack the lights in heaps of 30 at a convenient spot, where they can be quickly handled. Then everything will be in readiness, and labour economised at a busy period.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the **PUBLISHER**; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the **EDITORS**. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

Letters for Publication. as well as specimens of plants for naming, should be addressed to the **EDITORS, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, DECEMBER 13.—National Chrys. Soc. Ex. Com. meet. United Hort. Ben. and Prov. Soc. Com. meet.
THURSDAY, DECEMBER 16.—Manchester and N. of England Orchid Soc. meet. Linnean Soc. meet.
FRIDAY, DECEMBER 17.—B.G.A. (South London Branch) meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 40.5.

ACTUAL TEMPERATURE:—*Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London, Thursday, December 9 (10 a.m.): Bar. 29.7. Temp. 44°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY.—Dutch Bulbs at 11, Hardy Trees and Shrubs at 1.30, at 67 and 68, Cheapside, E.C., by Protheroe and Morris.
MONDAY AND WEDNESDAY.—Rose Trees, Shrubs, Perennials, Bulbs, etc., at Stevens' Rooms, King Street, Covent Garden, at 12.30.
WEDNESDAY.—Dutch Bulbs at 11, Herbaceous Plants, Shrubs, Fruit Trees, etc., at 1.30, Japanese Lilies at 5, at 67 and 68, Cheapside, E.C., by Protheroe and Morris.
THURSDAY.—Special sale of Roses, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 1. Freehold Market Garden and Nursery, 44 acres and Greenhouses, at Walton-on-Thames, by Protheroe and Morris, at the Mart, London, E.C.
FRIDAY.—Dutch Bulbs at 11, Border Plants, Roses, Fruit Trees, Shrubs, etc., at 1.30, at 67 and 68, Cheapside, E.C., by Protheroe and Morris.

German Agriculture and the War.

So much has been and is being written on the real or imaginary shortage in Germany of food commodities that it is well that an official statement should be issued. Such a statement appears in the *Journal of the Board of Agriculture* (November, 1915), but is, unfortunately, unsigned. Hence it is difficult to estimate the value of the conclusions which it contains.

From the article we learn that in normal times Germany imported only about one-tenth of her feeding stuffs for man and beast, but that, inasmuch as war was declared before the harvest had been gathered in, the deficiency—owing to mobilisation—was greater than one-tenth.

On the other hand, much of the food normally destined for feeding of stock is suitable for human consumption—Bar-

ley, Oats, Potatos, etc. Hence by slaughtering a sufficient number of animals scarcity might have been prevented. This was not done until actual scarcity had declared itself, but in January, 1915, the danger was recognised and steps taken to reduce the number of swine. Potatos, of which Germany produces a quantity greater than that raised by any other country, might have served to repair the deficiency, but in the earlier days of the war farmers were encouraged to feed their surplus to stock, and it was not till later that it was realised by the authorities that the Potato stocks, properly handled, would serve to make good the deficiency in corn.

The patriotism of the German was not sufficient to overcome the desire on the part of those holding Potatos to make large profits, and on the Government deciding to purchase Potatos at a certain price, only small quantities were forthcoming. Farmers were holding their stocks in the hope of better prices. Later on, after a bout of speculation, there was a Potato panic; prices fell, and the Government Potato Department found large stocks left on their hands. Much of this surplus was used, however, for the making of dried Potato flakes, which are of good keeping quality. This year's harvest is not believed to be up to normal, owing to shortage of labour and draught-animals and scarcity of nitrogenous and phosphatic manures.

Elaborate measures have now been taken to ensure the most economical application of foodstuffs, by regulating the feeding of stock, fixing minimum prices for Wheat, Rye, etc., prescribing rations for dwellers in towns, drying large quantities of Potatos and reserving them until spring and making large use of the forests as feeding-grounds for pigs.

The article concludes with the comment that although they blundered at the beginning the officials have displayed energy and competence in dealing with what was and no doubt is a difficult situation.

Our Almanac.—We shall shortly issue a *Gardeners' Chronicle* Almanac for 1916. 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 fixtures for the coming year.

NATIONAL ROSE SOCIETY.—The thirty-ninth annual general meeting of the society will be held at the Connaught Rooms, Kingsway, London, on Tuesday, the 14th inst., at 2.30 p.m. Tea and light refreshments will be served to members after the annual meeting. A short address on "Dean Hole," the first president of the National Rose Society, will be given by the president, Mr. EDWARD MAWLEY, V.M.H., after tea.

ROYAL METEOROLOGICAL SOCIETY.—A meeting of the Royal Meteorological Society will be held at 70, Victoria Street, Westminster, on Wednesday, the 15th inst., at 7.30 p.m. Papers to be read:—(1) "The Incidence of Bright Sunshine over the United Kingdom during the Thirty Years, 1881-1910," by F. J. BODIE; (2) "Remarkable Cloud Phenomena," by W. GALLOWAY, D.Sc.; (3) "South African Coast Temperatures," by J. R. SUTTON, M.A., D.Sc.

MR. HERBERT COWLEY.—Mr. HERBERT Cowley, whose appointment as editor of our contemporary, *The Garden*, was announced in our columns a short while ago, was married on Wednesday last, the 8th inst., to Miss Elsie M. Hurst, of Kingston-on-Thames. Mr. Cowley joined the Army shortly after the outbreak of the war, and attained the rank of corporal; but a severe shrapnel wound in the knee rendered him unfit for further active service, and he was invalided home. He has since made good progress, but is still suffering from the effects of his injury.

KEW AND THE PUBLIC.—In view of the alleged intention of the Board of Agriculture and Fisheries to deprive the public of the right of free entry to the Royal Gardens, Kew, granted in 1841, we may recall the following testimony of Sir WILLIAM THISELTON-DYER,* late Director of the gardens, to the exemplary behaviour of the crowds which habitually visit Kew:—"... The wealthiest could hardly extend more care to Kew than the nation bestows, or, I might add, more respect than its visitors exhibit. Its very stateliness represses exuberance of conduct. This makes the labour of control easy. A vast Bank Holiday crowd feels that it is present at a full-dress reception, and behaves with irreproachable restraint. The avoidable damage at the end of a popular day may be covered by a few pence. I claim that in this at least Kew performs a great educational service."

AWARDS AT THE PANAMA-PACIFIC EXPOSITION.—Messrs. KELWAY AND SON have been awarded the Medal of Honour for the best collection of flowering annuals in the Horticultural Section of the Panama-Pacific Exposition at San Francisco.

GARDENERS' POCKET DIARY.—A shilling pocket diary for gardeners, after the style of that published by the R.H.S., but rather larger, is issued by the proprietors of *Garden Life*, Hatton House, Great Queen Street. There are a number of useful hints and garden recipes in the first part of the book. A glossary of botanical terms is a welcome feature, and will prove very useful. The postal regulations have been brought up to date, but the lighting-up times given at the beginning of each week are the old ones.

THE HOME TIMBER TRADE.—It is only necessary to glance at the returns of the imports of timber from abroad to-day and to compare them with the figures previous to August, 1914, to realise the extent to which we are now dependent on our own timber resources. We excavate in this country about 260,000,000 to 270,000,000 tons of coal per annum, and the mining industry requires about four and a half million tons of timber annually. It is estimated that for every ton of coal sent to the pithead 8 lineal feet of pitwood are required. Scottish landowners are entering wholeheartedly into the duty of providing supplies from their woods and forests. There is, however, a shortage of labour, as it is stated that one-half at least of the skilled men employed in the trade have enlisted. Women and boys may undertake the lighter forms of labour, but it requires skilled men to cut down the trees and bring them to the sawmill. It is evident that for years to come foreign timber will be scarce and dear in this country. This being so, it is obvious that our home resources will be taxed to the utmost in the coming years, and now is the time for the nation to see that all available ground is planted as early as possible.

WELSH VEGETATION.—At the meeting of the Linnean Society on the 18th ult. Dr. E. J. SALTSBURY, F.L.S., showed a series of lantern-slides,

* See "Introduction" in *The Royal Botanic Gardens, Kew*. By W. J. Bean. (Cassell, 1908.)

entitled "Photographic Studies of Welsh Vegetation." In his remarks he touched on the vegetation of limestone; on limestone cliffs grew *Festuca ovina* and hairy species, such as *Geranium sanguineum*, *Parietaria officinalis*; fleshy species as *Brassica oleracea* and *Spergularia rupestris*; or leathery-leaved species, as *Thalictrum minus*, *Cotoneaster vulgaris*, and *Hedera Helix*; limestone pasture, with the dominant species *Festuca ovina*, accompanied by many of the common chalk-down species. Other characteristic plants were stated to be *Helianthemum canum* f., *Spiraea filipendula*, *Veronica spicata* var. *hybrida*, and *Spiranthes autumnalis*. Locally small woods of *Quercus sessiliflora* occurred, though usually confined to siliceous soils. In the second part of his lecture he described the vegetation of the siliceous soils, the *Quercus sessiliflora* woods, and associated trees as *Betula* spp. and *Pyrus Aucuparia*. The lecturer stated that where the water-content was high, but the soil not acid, *Fraxinus* became common. The average light intensity in summer was about 7.6 per cent. of the maximum diffuse illumination outside. The shrub layer was usually poor. The flora of the drier parts largely consisted of heath species: in the wetter and more acid parts, *Vaccinium Myrtillus* was often abundant; towards the base of the slopes the ground flora was often almost entirely cryptogamic. Epiphytes as *Polypodium vulgare*, and lichens were often abundant. In the valley bottom the *Quercus sessiliflora* woods merged into *Alnus* woods, with a light-intensity of about 3 per cent. or under. The scrub was chiefly of *Crataegus*. Dr. SALISBURY also dealt with the subalpine vegetation, notably the subalpine lakes with *Subularia aquatica*, *Lobelia Dortmanni*, *Littorella lacustris* and *Isöetes*, with absence of marginal vegetation.

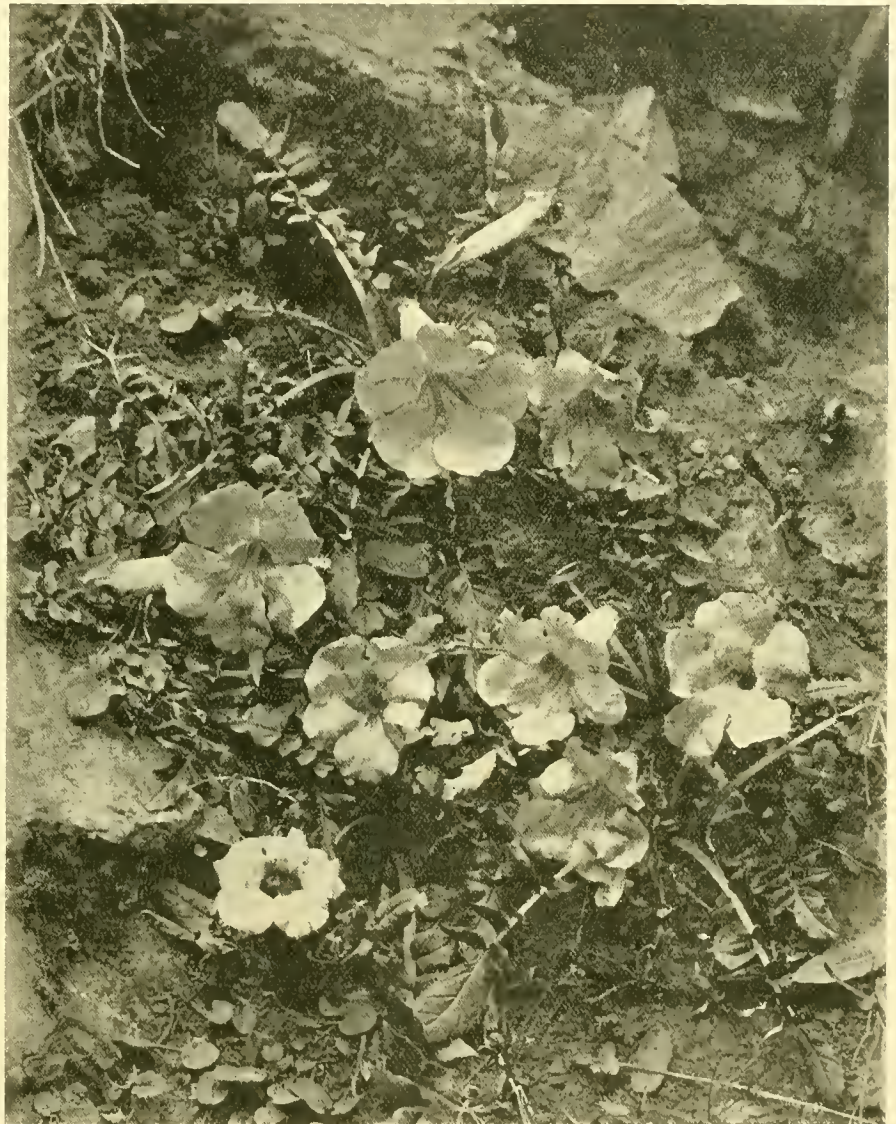
WAR ITEMS.—Lce.-Cpl. JAMES SWEENEY, R.A.M.C., has been awarded the D.C.M. for gallant service in action during the recent fighting in Flanders. The official report says:—"Lance-Corporal J. SWEENEY stayed for 27 hours in an open trench at Hooze under very heavy shell fire, directing the stretcher-bearers and dressing many wounded. He then led stretcher-bearers up and down the trenches to the advance trenches, working incessantly for 48 hours." Lance-Corporal SWEENEY is just over 19 years of age; he joined the Army in September, 1914. To mark their appreciation of his brave conduct the members of the Liverpool Parks and Gardens Committee are presenting him with a luminous wrist watch; and his fellow workers at the Botanical Gardens, where he had worked for three years before joining the Army, are sending him a silver cigarette case with a suitable inscription.

— At the British Red Cross Farmers' Sale, held at Bedford recently, a bouquet of red and white Carnations, presented by Messrs. LAXTON BROS. to Lady AMPHILL, who opened the sale, was offered by auction. There were various bids, and the bouquet was bought for £12 12s., when it was split up into buttonholes and re-sold in that form. Altogether the bouquet realised £62 11s.

YEW POISONING.—In connection with the recent correspondence which has taken place in our pages on this subject, it is interesting to note the opinion of Professor D. JENSEN, of the Boston Institute of Pharmaceutical and Physiological Chemistry, U.S.A. Dr. JENSEN says:—"The red sarcocarp of the fruit of *Taxus baccata* is non-poisonous. The seed contains the poisonous principle, taxin. This is precipitated from its saturated solution in very dilute sodium chloride solution by adding more salt, by ammonia, by sodium hydroxide, by ammonium sulphate, and by alkaloidal re-agents. It gives a red colour with strong sulphuric acid, and a red ring with

Kiliani's re-agent. It decolourises permanganate in both acid and neutral solutions. The unripe fruit is probably more poisonous than the ripe. Taxin is not poisonous to fish. By gradually increasing the subcutaneous dose, rabbits, guinea pigs and cats quickly acquire a relative immunity to the poison so that they can be made to withstand many times a normally lethal dose. Game and domestic ruminants withstand moderate amounts of Yew leaves without harm. Horses and other solipeds, although more susceptible, soon become accustomed to taxin. It may be extracted from the urine of poisoned animals, in which it is excreted unchanged, by

success may be due to the fact that *Stereum purpureum* was never really present in the affected tree, and that the silverying was due to other causes. It has also been shown that some affected trees have recovered without any fungicidal treatment, and even without any treatment at all. Very little reliance can, therefore, be placed on reports of the successful treatment of single trees. Plugging affected trees with sulphate of iron has been tried. A hole has been bored into the tree, crystals of sulphate of iron have been inserted and the hole closed hermetically. Indecisive results only have been achieved by these means and the process cannot be recom-



[Photograph by Reginald Farrer.]

FIG. 123.—MR. REGINALD FARRER'S EXPLORATIONS: INCARVILLEA SP. IN THE SOUTHERLY VALLEY NEAR WOLVESDEN HOUSE.

(See p. 358.)

shaking out with ether after adding excess of sodium carbonate. It acts as a paralyzant of the central nervous system."

CONTROL METHODS FOR SILVER-LEAF.—A special leaflet on Silver-leaf, issued by the Board of Agriculture, gives the following information on Methods of Control:—"Many experiments have been conducted with the object of finding a remedy for Silver-leaf, but although occasionally local successes have been claimed, no really effective remedy has yet been found. The explanation of the apparent

mended. No really satisfactory treatment is at present known, that is to say no treatment which is certain to bring good results without running serious risk of causing damage in other directions. The only useful advice that can be given at the present time is that precautions should be taken to prevent the spread of the disease. (1) It must be remembered that the fungus does not appear on the bark until the branch or tree attacked has been killed, and that so long as a diseased portion of the tree is capable of bearing leaves, even though they may be wholly silvered, it cannot spread the disease. As soon

as the branch dies the fructifications of *Stereum purpureum* are liable to appear and under favourable conditions spread the spores of disease. It is therefore unwise to cut off branches bearing silvered leaves, unless the wound is promptly and effectively closed with a coating of tar. Dead branches should, however, be cut off at once and burned before the fungus has time to develop, and the wound should be closed with tar. (2) It must be remembered that the fungus is to be found considerably further down the branch than the level at which the silvered leaves appear. When, therefore, an affected branch is broken or is cut off for any reason the wood should always be cut back to a point where no brown stain can be found. (3) Dead wood should never be left lying about in an orchard or garden where Silver-leaf exists. All such wood should be burned on the spot or sawn up and used for fire-wood immediately. (4) Dead trees should be cut down to the ground, and if for any reason they cannot be grubbed up, the stump should be charred and well covered over with earth. (5) Suckers should never be taken from silvered trees for purposes of propagation. (6) The practice of cutting back silvered trees and regrafting them is inadvisable, and may even be a means of spreading disease. (7) There is a persistent belief that disease is spread to healthy trees by pruning them with a knife that has been used for silvered trees. This belief is probably unfounded, but it is better to seal all such wounds with tar, as the bare surface affords an easy opening for infection. (8) The fungus flourishes in damp situations. Any improvement in the drainage of an affected orchard or garden will probably help to prevent the spread of the disease."

BRACKEN AND POTASH.—Analyses show that the ash of Bracken contains 20.45 per cent. of potash (reckoned as K_2O), 51.9 per cent. of total potash soluble in water, and 7.35 per cent. of phosphate of lime. Professor Bevor, of the West of Scotland Agricultural College, estimates that 10 acres of fully stocked Bracken land may produce 1 ton of ash.

THE ROOT CROPS.—The average yield of Potatoes per acre in England and Wales is estimated to be exactly equal to the average of the preceding ten years, while the total production, although nearly 100,000 tons below that of last year, is some 180,000 tons above the average. Turnips and Swedes have produced less than in 1914 by some 1,644,000 tons, mainly owing to the reduced acreage, although the yield per acre is also a little below that of 1914, and about two-fifths of a ton below the average. Mangolds, also on a rather smaller acreage, have yielded some 84,000 tons less than in 1914, but the yield per acre, although about two-fifths of a ton below average, is two-thirds of a ton above that of 1914.

PUBLICATIONS RECEIVED.—*Bulletin of Miscellaneous Information*. Appendix IV. 1915. Royal Botanic Gardens, Kew. (London: Wyman & Sons, Ltd., 29, Brema Buildings.) Price 1d.—*Potato Tuber-Rots Caused by Species of Fusarium*. By C. W. Carpenter. (Reprinted from *Journal of Agricultural Research*, Department of Agriculture, Washington, D.C.)—*Journal of the Board of Agriculture*, No. 8, Vol. XXII. November, 1915. (Board of Agriculture and Fisheries, Whitehall Place.) Price 4d.—Leaflets: Nos. 292 (*Foot-and-Mouth Disease*), 293 (*Soil Analysis*), and 302 (*Silver Leaf in Fruit Trees*). (Board of Agriculture and Fisheries.)—*Agricultural Statistics*, 1914. Vol. XLIX., Part 3. Prices and supplies of corn, live stock, and agricultural produce. (London: His Majesty's Stationery Office.) Price 5d.—*Bulletin*, No. 273, *Dispersion of Gipsy Moth Larvae by the Wind*. By C. W. Collins, Assistant Entomologist of the United States Department of Agriculture. (Washington, D.C.: Bureau of Entomology.)—*Proceedings of the Academy of Natural Sciences of Philadelphia*. Vol. LXVII., Part II., April-August, 1915. (Philadelphia: Academy of Natural Sciences.)

OF THE FORMS OF FRUIT TREES.

(Concluded from page 346.)

III.—THE DWARF STANDARD, PYRAMID AND DISTAFF.

THE DWARF STANDARD.—The dwarf standard is held to be about the best form for large plantations by a number of large growers with whom I have spoken. It may need rather more room than can be spared in the small garden. Its advantages are that it brings fruit and parts of the tree within reach without the aid of steps or ladders, it is not so much exposed to damage of fruit by winds, the stem permits of banding for winter and codlin moths, and also allows cultivation to be done. If grown on the open type a fair exposure to light and air is afforded, and the plantations of low dwarfs I have seen have a very practical appearance, especially when laden with fruit. Like the tall standard they are often left untrained, and branches occur wherever the tree has thought fit, and consequently there is no attempt at symmetry that the sap and burdens may be equally distributed. The mode of training is just as that already sketched out for the tall form, but shorter lengths of stem are left proportionately to the height of stem and the

ground, form the first tier and will want equalising as the upper ones will draw more sap and become out of proportion to the lower ones. The second tier is similarly formed with a similar set of shoots obtained about 1½ feet from the first tier, but if the first tier is being robbed by a too succulent leader it may be necessary to check back and wait till later to form the next tier. It is obvious that the branches in each tier are not attached exactly at the same level, and consequently they are not so easy to keep regular as when they are originated by cutting the leader to the required height, only allowing the terminal shoot to develop, and cutting this back again down to its basal cluster of leaves; five shoots are thus easily obtained to form the front tier, and a continuation for the main stem. Further tiers are obtained in the same way.

The French terms, "Quenouille" and "Fuseau" are applied to tapering forms, in which the branches are placed irregularly up the stem; both terms are translated as "Distaff," but apparently the former is usually applied to tall trees and the latter to dwarf specimens. "Tall and dwarf Distaff" would seem to be satisfactory equivalents in our language. As has already been observed, distaffs are usually called pyramids in England, without regard to



FIG. 129.—ROW OF DWARF DISTAFF APPLE TREES IN PROF. LORETTE'S PLANTATION AT WAGNONVILLE. PART OF HORIZONTAL CORDON IN FOREGROUND.

space available. Once the tree is formed, pruning consists in suppressing any internally-placed shoots that may arise, and shortening where needed.

THE PYRAMID AND DISTAFF.—So far as my memory serves me the pyramid is a rare form in this country, what passes as a pyramid being merely a "Quenouille," "Distaff," or "Cone." In the pyramid proper the branches are placed in tiers, one about 1½ feet above the other; the branches in each tier are usually five in number, and consequently a horizontal plan shows a pentagonal figure. On the other hand, the distaff or cone, with its branches placed irregularly up the stem, gives a more or less circular outline in plan, and so cannot pretend to the title of pyramid. The pyramid is formed according to the older methods, making use of naturally developed shoots, and by later methods by causing the eyes of the basal clusters of leaves to break by means of twice cutting back. In the former method, inasmuch as five branches are required, the shoots from the six upper eyes are only retained after cutting back the leader to a height of about 1½ feet; the uppermost shoot gives the continuation of the leader and may require splinting; the other five shoots, the lowest of which is about a foot from the

the meaning of pyramid. These are formed like the pyramid by establishing four or five branches at a time, but without forming tiers. Lorette advances six branches each time, but advises cutting back the upper ones to their basal clusters, lest they become too vigorous and deplete the lower ones of sap. In the photograph (fig. 129) the features of the row of dwarf Distaffs at Wagnonville can be seen, and Lorette reckons to get a hundred fruit off each. It is his elect form for the small garden, it takes but little space, it is easy to establish, it takes but little attention, it causes but little interference with other cultivation and requires no support. Compared to other low-trained forms, such as the old horizontal palmette or the more up-to-date superposed series of single horizontal cordons, it will be seen that access to the ground beyond is not barred by a row of small distaffs, which is an advantage in a garden.

IV.—INTENSIVE FORMS IN THE OPEN NOT REQUIRING VERY ELABORATE SUPPORTS.

HORIZONTAL CORDON.—This is a very favorite form in France, especially for placing along a border together with such low-growing things

as Strawberries. On looking more narrowly into the question when abroad, I came to the conclusion that they made cultivation too awkward at their usual height of 1½ foot, and moreover the possibility of the netting necessary for Strawberries looked extremely vague. The double horizontal or T-cordon is not favoured for many reasons in France, and I do not recall having seen a single specimen there. The horizontal cordon is not generally considered suitable for the Pear. Upward shoots have a tendency to become gormands, especially near the bend, and if not "Loretted" they need be cut off at the heel. The only support needed is a strained wire.

WINGED PYRAMID (Pyramide ailée).—This is the form of which M. Lorette is especially fond, and from it he reckons to get some seventy medium-sized Pears per linear yard of stem. When I saw his trees (end of June) the fruits were still too small for judging final crops and size, but there were enough to make one almost think that the above figure might be an under-estimate in some cases. The training supports are simple (see fig. 130), merely a central upright, to the top of which four or five wires are attached; the lower ends of the wires are connected by the intermediary of raidisseurs to copper wires, which are anchored to buried bricks or stones (No. 10 I.S.W. gauge would seem thick enough; No. 8, perhaps rather thick, is what I am using). The tree consists mainly of four or five branches, which are conducted horizontally to the wires, along which they are brought upwards and inwards till eventually they reach the central axis; at intervals of about 15 inches series of branches are taken from the central stem horizontally outwards to the main branches, where they are stopped. In his book Professor Lorette insists rather on in-arching these lower horizontal tiers, but he informed me that this was not necessary for preventing basal denudation, and many of his trees were not so treated; however, the possible advisability should not be forgotten.

The full-sized forms are some 12 to 13 feet high, and have a base diameter of 8 feet (see fig. 131); they are therefore wider in proportion than the ordinary pyramid, which has the normal ratio 3:1. To this size it may (I think properly) be objected that both space required and height are too great; and the specimen that I am training is to be only 6 feet high, with a 6 feet base, with five main branches instead of four, as in the full size; the extra obliquity should not give trouble with gourmands with the "Loretian" pruning. Five branches give plenty of room to get at the tree. The main branches may either be selected from natural ones, or the method given in the first article may be used to get absolute leveling. The central axis, really a comparatively minor part of the tree, must be carefully checked, and probably repeatedly cut back to the basal cluster, or the main branches may suffer denudation. Further details will be found in Lorette's book.

THE FOUR-SQUARE VASE (gobelet cubique) is closely allied to the last, but four uprights are required to guide and support the four main branches. Lorette runs up a central stem and in-arches four branches at the summit. Another type has the central stem suppressed, and the appearance through a carefully aligned row that I saw in Normandy was a perfect vista of fruit, and no doubt must have been a wonderful *coup d'oeil* in blossoming time.

THE "OBELISK" is a form that is possibly only on paper as yet, it is a form I propose to put in hand as a compromise between the winged pyramid and the four-square vase. The object is to reduce floor space and make available the extremely compact, rigid and simple type of framework that is used for the former. The summit of the upright will be provided with a cross-piece to keep the tops of the

branches about one foot apart; the base diameter will be about 4 feet.

FORMS REQUIRING COMPLICATED SUPPORTS.

These, such as the fully formed vases ("vase," "gobelet"), spirals, etc., I leave on one side, as they seem to be rather too complex, except for specimens of the trainer's art. Thus several branches of the "gobelet" have to be untied from their supports in order to get at the centres for pruning, etc. Perhaps the most perfect "gobelets" I have seen were formed of Cherry trees, which did not seem to have resented the abundance of cutting and pruning that has been done. *Herbert E. Durham, Sc.D.*
(To be concluded.)

VEGETABLES.

HARICOTS AND FRENCH BEANS.

So far as one can see there is nothing to prevent Haricots from being grown in this country as well as in France. Having had charge of a large garden in the Department of the Sarthe, I can speak with some experience as to the varieties required for a large, private establishment to keep up a supply all the year round.



FIG. 130.—WINGED PYRAMID WITH FIVE WINGS: SECOND YEAR.

To commence with the Beans known as Haricots verts. It is very seldom that one sees them cut as your correspondent mentions (page 157). The Beans are gathered for use when about 3 inches long, and the pods are only tipped. Care is taken to go over the plot, removing any that have become too old (unless wanted for flageolets). This insures a constant supply of small, tender Beans.

The reason why stringless varieties are not preferred is that they are not nearly so good a colour when arranged for the table as the varieties "à parchemin." I know that it is difficult to persuade some French chefs to use them. They should be freshly gathered and kept cool and moist.

From trials we found the best varieties to be for this purpose Vilmorin's Haricot à parchemin. Incomparable for the earliest supplies. This variety continues in bearing a long time. The next preferred was Sutton's Green Gem. This variety was especially good for late work. Sutton's Superlative is also very good.

The stringless or "Mangetout" is used largely where a large quantity is necessary for servants and workmen. I found the best two varieties to be Sutton's Perfection and Vilmorin's Mangetout St. Fiacre.

FLAGEOLETS.—These are the Beans left until three-parts grown, and then shelled like Peas just as the pods commence to turn colour. They are often served with Parsley sauce as a separate dish, and a few are sometimes used with Haricots verts.

For this purpose Incomparable is unsuitable, having two black specks on the seeds, and not looking nice when cooked. Sutton's Green Gem and Flageolet Chevrier are good, the latter having rose-coloured seeds. Some Mangetout varieties are also good for this purpose.

HARICOTS SECS OR DRIED HARICOTS.—In places where a quantity is required these are usually cultivated in the open field. The land is prepared by ploughing and harrowing, and is then thrown up into ridges about 2 feet 6 inches apart. The seeds are planted about six in a clump, and these clumps are usually 18 inches to 2 feet apart, according to variety. The seeds are planted on the sunny side of the ridge about May 20. When some 10 inches high a small plough is run between the rows, earthing them up, and clearing weeds away. The after-cultivation consists of keeping the ground clear of weeds. Early in October the plants are usually ready for pulling up, for the pods are then ripe enough. If possible they should be placed in a drying place, but not in too sunny a spot unless the weather is very damp. When sufficiently dry they are tied in bundles and hung thinly over poles in an open shed until wanted to thresh out. Should the weather be very moist they benefit by being placed for a day near a small fire before threshing. They are then put in a sack and beaten with a stick, when the seeds will nearly all fall out of their pods, and when sifted are ready for use.

Varities.—Most people prefer white or green seeded kinds, but working people use them of all colours, and like a change from white. Stringless varieties are also suitable for this purpose, but are not preferred. The varieties that suited us best were of the dwarf kinds:—Haricot nain Flageolet blanc ordinaire, White Canadian Wonder, Sutton's Green Gem; red, Roquon de Coq; tall variety, Mangetout de Soissons. For Butter Beans I prefer Beurre nain de Dijon or Sutton's Golden Waxpod. These can also be used as Haricots secs. *W. L. Lavender.*

FOREIGN CORRESPONDENCE.

THE ORIGIN OF THE RADISH.

The readers of the *Gardeners' Chronicle* will pardon me if I bring up anew a question so often discussed already, but it is useful in the interest of scientific truth to establish clearly certain facts which may still appear obscure.

Professor Henslow, in *Gard. Chron.*, June 5, 1915, p. 317, puts forward the hypothesis that "the failure to reproduce the large, fleshy roots round and long like Carrière's may have been due simply to some idiosyncrasy of the plant in resisting the effects of the direct action of the conditions of life." This opinion seems to me debatable. I agree with Professor Henslow on many points, nevertheless my conclusion is absolutely opposed to his.

(1) Nobody supposes that the original transformation of wild species into a cultivated variety has always been due to their having been crossed.

(2) Nobody denies the power of cultivation to change the non-hereditary characters of a wild plant; for example, all gardeners know that in order to have perfectly round Radishes they must pay special attention to their cultivation. It is common knowledge that the form or size or a root, leaf or flower may be modified by methods of cultivation.

(3) *Raphanus sativus* can be prevented from forming a tuberous root, even when seeds produced by self-pollination are used.

(4) I do not deny that Carrière and Hoffmann have raised intermediaries between *R. Raphanistrum* and *R. sativus*. I have raised exactly the same plants under the same conditions.

But all that admitted, it remains, nevertheless, true that cultivation alone does not modify the hereditary characters of a species; that *R. sativus* L. is not a variety of the wild *R. Raphanistrum* L. raised in several generations; and that Professor Decaisne was right when he maintained that Carrière's experiments proved absolutely nothing on this last question.

(1) The difference between *R. Raphanistrum* and *R. sativus* lies not only in the form of the root (slender and stringy), but in the anatomical structure of its siliqua, and this character causes it to be, so to say, the antipode of *R. sativus* in the genus *Raphanus*.

(2) *R. sativus*, self-pollinated or isolated from *R. Raphanistrum*, may cease to be a bulbous-rooted plant, but it will preserve its botanical characteristics. This has been proved (a) by evidence from the herbaria of all countries, (b) by direct experiments.

(3) *R. Raphanistrum*, self-pollinated, does not show in four generations any specific modification, whilst plants raised from similar siliquas, cultivated in the same soil and under the same conditions, as near as possible to each other but not self-pollinated, change specifically.

(4) In one soil (the light and chalky soil of Grignon) one can obtain the same results as Carrière, results that he obtained in two different soils (no account being held of slight differences in form).

(5) These plants segregate in subsequent generations in a Mendelian manner.

(6) It is very easy to raise exactly the same plants by a direct synthesis obtained by crossing.

R. Raphanistrum crossed with a red Radish gives a hybrid with a pink root; a *R. Raphanistrum* crossed with a black Radish gives a hybrid with a blackish root, etc. These facts have been verified by a responsible committee of experts, presided over by Prof. Bonnier, who himself examined the fresh samples.

(7) A *Raphanus sativus* crossed with a *R. Raphanistrum* gives exactly the same products as a *R. Raphanistrum* crossed with a *Raphanus sativus*, consequently it would seem difficult in the future to be in doubt as to the significance of Carrière's experiments. The "Raphanodes" are simply cross breeds; though by cultivation "fluctuating" characters may be modified, the species cannot be transformed. Y. Trouard Riolle, *docteur ès sciences*.

of which the crop is permitted to remain on the tree [not till it is ripe, as I have seen it advised, but] till it is at the proper stage for gathering, should not only keep in perfect condition for many months, but an uninterrupted change proceed which alters its sour flesh to that which, when cooked, challenges that of the Pear in flavour. No fruit-room and no method of preservation will ever succeed in producing a quality of that kind apart from proper cultivation and harvesting at the correct time. Until the latest fruit is stored—which is, here, in November—the fruit-room need not be closed unless during a spell of frost, and it is always important to have openings for ventilation. A very dry atmosphere is doubtless undesirable, but I should be afraid to damp the surfaces, as a recent leaflet recommends, in order to mitigate the effect of over-dryness. There is from this time not much fear of simple dryness being harmful, provided it is possible to maintain a low temperature and still atmosphere. During frosts it is difficult to maintain an even temperature, or one at least that does not injuriously affect the fruit, because the application of

or even later, in the year, when Alfriston and Dutch Mignonne are associated with them, but as cookers. The season has not a little to do with the maturation of some varieties, and thus it is that Tower of Glammis may keep as long as those named or it may be in condition much earlier and have lost its peculiar flavour if not eaten before them. It is needless to remark on the damage that may be done to late fruits by leaving decaying fruits of earlier kinds to remain in the same room with them. Where there is a surplus of such fine dessert varieties as Ribston Pippin by all means cook them; they are incomparably better than any culinary variety. King of the Pippins has a peculiar flavour which, while grateful to some palates, others do not like, either raw or cooked. R. P. Brotherston.

HOME CORRESPONDENCE.

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

APPLE GASCOYNE'S SCARLET.—Like your correspondent, Mr. Harry Williams (p. 354), I was surprised to see *E. M.*'s praise of this Apple. Like Mr. Williams, again, I find it one of the very worst varieties to canker. Moreover, as a dessert Apple it is not pleasant to eat on account of the coarseness of its fibre, and it obtains no higher price in the market than many a second-rate cooking Apple which yields better. As it is a gross woodmaker, Mr. Edward Bunyard is clearly right in recommending light pruning. *A Southern Grower*.

I have 150 bush trees of this variety on the Paradise stock, and cannot speak too highly of it in every way. During the past five seasons it has never failed to give a full crop of good-sized, well-coloured fruits. The soil here is thin, with a wet, heavy clay subsoil, yet this variety has never shown the least sign of canker, neither is it attacked by woolly aphids. I quite agree with *E. M.* that summer pruning and root restriction is the treatment to suit this variety. I regularly feed it with house sewage direct from the tanks, and my experience is that Apples on the Paradise stock derive material assistance from this treatment. I had 75 trees of Lane's Prince Albert on a poor piece of land, and decided to give them a good dressing with sewage. Before the application the trees were in very poor condition, but after the treatment good growth developed and clean fruits of good size were produced. *W. Stewart, Desford, Leicester*.

I assure Mr. Williams that what I wrote about this Apple is correct in every particular. The ten trees here—trained as bushes—14ft. high, with a branch-spread of 20 feet, planted some twenty-five years ago, are growing in stiff, cold soil, and are almost immune from canker. Where many other sorts fail to grow owing to their tendency to canker, this variety appears to luxuriate. At first the trees grew exceedingly fast, but they were kept fairly thin of branch, and once severely root-pruned. Since that we have had no trouble with them, and they are now yearly closely spur-pruned, as stated on p. 334. Seeing the wonderful crops of this Apple in Kent, I was induced to pay special attention to my trees, and am well satisfied with the results. I advise all with whom I come in contact to add this variety to their collection. If further proof of my contention were required, I would refer Mr. Williams and Mr. Bartlett to the trees of this Apple at Aldenham House Gardens, where they and many other large trees growing on grass receive large quantities of house-sewage, with excellent results. *E. M.*

PRUNING OF APPLES.—Under the method of pruning Apple trees, described and recommended by Dr. Herbert E. Durham on p. 346, there would be 48 branches in the fifth year from planting. I made several attempts to sketch the progress of a tree trained on this exclusively lateral method, from the three branches in the first season of growth to the 48 in the fifth; and, although I drew only the two frameworks supposed to be facing me, leaving a blank for the third, there was a net-



FIG. 131.—WINGED PYRAMID AT WAGNONVILLE: BEFORE THE JUNE-JULY PRUNING.

FRUIT REGISTER.

APPLES IN STORE.

WHEN a beginning was made in the refilling of the fruit-room shelves in the present year, there was still a remainder from last crop, which would seem to show that the store was a suitable one for the preservation of hardy fruit, that the management of the room was correct, most important of all, that the fruit had been gathered at the proper stage, and perhaps, also, that the fruit had not suffered any check to its development and finish.

In *The Fruiterers' Secrets*, an informative pamphlet published more than three hundred years ago, the unknown author writes:—"All lasting fruit, after the middest of May, begin to wither, because then they waxe dry, and the moisture gone, which made them looke plump; they must needs wither and bee smaller, and nature decaying they must needs rot." That is true, but only when late fruit is gathered too soon, a practice which must have abounded in those far away times, and, I am afraid, not yet obsolete. It is one of the wonders of vegetation that Apples produced on a tree which has not been overburdened with its crop, and

heat to keep it from falling at the same time induces transpiration in the fruit, and this probably is the reason why fruit keeps less well in a store of small dimensions than in a lofty one, just as Grapes are easier to preserve in a large vinery than in a low one. It is not enough to apply fire-heat to maintain a temperature a few degrees above freezing while frost intense enough to call for artificial heat prevails. The heating must be continued till the period of thaw is past, because the atmosphere is then overcharged with moisture, and it needs heat to keep it from affecting the fruit, which otherwise would be covered with moisture, at that period difficult to remove.

If the marketing of late Apples affords an indication of the dates at which they are used, it is clear that they are used so early as not to have arrived at that perfection which, given time to mature, is their property. Striped Beefing, Northern Greening, Beauty of Kent, Mère de Ménage, Newton Wonder are varieties which here are not at their best till April, and the flavour of Duke of Devonshire and Claygate Pearmain is never developed till as late,

work of branches nearly touching each other when the sixteen outgrowths from each main branch had been included. How the fruit from some of the latest growths can entirely avoid falling on the earlier ones, when blown off by wind, did not appear from my sketch. Besides, under this constantly forking method of training for five seasons it seems to me that there must be a maximum of fruit shading, which is worse than any damage done to fruit falling from a top branch on to a lower one, seeing that "drops" in any case should be sold quickly as such. *A Southern Grower.*

WOOLLY APHIS ON THE WILD CRAB (see pp. 298, 312, 339).—I have read with much interest the remarks of your correspondents on this subject. There are many things in regard to woolly aphids that are worthy of discussion. I have seen the pest on the Crab in hedgerows in this district for many years past. Does the insect attack Crab trees that are uninjured, i.e., those that have not been pruned in the ordinary course of hedge cutting, or injured by the gnawing of cattle or any other way? There are Crabs growing in the woods here as isolated specimens that are unaffected, whilst trees in hedgerows near by that have been trimmed are very badly infested. With regard to cultivated Apples, where shoots and branches have been cut off, the new cambium tissues around the cut surfaces of last winter's and spring pruning are nearly always attacked, also young shoots of the current year that are the result of pruning; whilst extension shoots that are not the result of pruning are not so much affected. Three years ago I noticed, where a rather large bough had been torn off an Apple tree (Keswick Codling) by the wind, leaving an injured surface, that towards the end of the summer the cambium tissue began to protrude, and later became a mass of woolly aphids. I know it is a difficult matter to dress all small cut surfaces, but I always dress cuts of larger size with a mixture of hot pitch and tar. Gardeners know that certain varieties of the Apple are much more susceptible to attack by woolly aphids than others. In these gardens are large bushes of Wyken Pippin Apple that are infested with woolly aphids every year, yet nearly touching them are bushes of Worcester Pearmain that have never been affected. I was much interested to notice this summer an extensive attack on Hawthorn hedges in this district by the larvae of one of the small ermine moths. All the hedges that were badly affected had been cut annually, but running parallel with and four yards distant from one of the worst attacks was a hedge that had not been cut for several years. In this case I could find no trace of the pest, therefore I think that pruning and other forms of injury make plants generally more susceptible to insect attacks. *J. G. Blakey, Holmwood Gardens, Redditch.*

QUINCE VRANJA.—This new Quince which was given an Award of Merit by the R.H.S. Fruit Committee on November 23, promises to be a distinct and valuable acquisition, the fruit being very large and of excellent shape, in appearance much resembling a large Pitmaston Duchess Pear. I am informed that its chief merit lies in its keeping qualities, an item of great importance. My employer, the Hon. Vicary Gibbs, was much impressed with its fine appearance when visiting Lord Ducie's beautiful gardens at Tortworth, and sent me a fruit for inspection. I induced Mr. J. Banting, Lord Ducie's gardener, to submit specimens to the R.H.S. Fruit Committee. The origin of the fruit is uncertain, but it is believed to have been imported some few years since from Serbia. However this may be, it is a grand Quince. *E. Beckett.*

RAOULIA AUSTRALIS (see p. 339).—*Raoulia australis* deserves to the full the appreciative remarks of Mr. Evans. The plant shows every sign of being hardy here, although probably its greatest time of trial is in the spring. It will probably be less susceptible to frost than to wet, and a plant here is being covered with glass to test its conduct, compared with one not similarly protected. As Mr. Evans states, *Raoulia* is a charming inch-high silvery carpeter, with minute glistening leaves. I am

growing it here in a moraine of chips, above larger gravel and with a little old mortar rubbish about it in full exposure to sun and air. It would not surprise me were it to prove a carpeter which would spread more quickly than is desirable for a small rockery or moraine. In any case, it is an exquisite plant, and harmonises well with grey chips. *S. Arnott, Sunny-mead, Maxwelltown, S.E. Kirkcudbrightshire.*

YEW POISONING.—I have before me a tube of taxine crystals. This poisonous alkaloid obtained from Yew is listed by some of the makers of such articles, and is quite well known. The late Dr. John Lowe, physician to King Edward, regarded taxine as a valuable heart tonic, and prescribed it in doses of 1/100 to 1/25 grain; the dosage of taxine is thus about the same as that of strychnine, though its toxicity is probably less. *P. W. Gamble, Pharmaceutical Chemist, Director of Allen and Hanburys, Ltd.*

—In my letter in your last issue there is a small printer's error—toxine should read taxine. *H. Clinton Baker.*

RHODODENDRON CAMPYLOCARPUM (see p. 338, 355).—This *Rhododendron* is perhaps one of the most popular species when well grown, probably because its colour is unique amongst these plants; but even in colour it varies considerably, the blooms of some stocks being much darker than others. The plant cannot be grafted so successfully as many other species, this being probably due to the stunted growth that it often makes. One of the causes of unsatisfactory growth is allowing too many flowers to develop, and another is stagnant soil. In a good growing season, when the plant is well attended to, and its supplies of natural food have been all that are necessary, it will develop ten times as many blossoms as should be allowed to mature. The plants at Leonardslee, mentioned by your correspondent on p. 355, were, in my time, always mulched to protect the roots from frost, and in very cold weather a little light material was scattered over the flower-buds, as these are apt to get blackened in the embryo stage by late frosts. It would appear that the flowers open in Paris earlier than in this country, that is, if they develop at the same time as those of *R. lacteum*. I showed the first truss of flowers at the Falmouth exhibition in the first week in April, when no flowers of *R. campylocarpum* were exhibited, nor did I see any fully developed in Cornwall. I have taken blooms to the R.H.S. meetings on several occasions early in May. *R. campylocarpum* would appear to grow and flourish rather better in gardens somewhat close to the sea. When sheltered from the North-East winds, I have seen the best plants in maritime districts. *W. A. Cook, Godalming, Surrey.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 7.—The last meeting of the present year was held on Tuesday in the Society's Hall, Vincent Square, Westminster. The number of exhibits was the smallest shown this year.

The Orchid Committee recommended three Awards of Merit to novelties, and gave four medals for collections.

In the Floral section Awards of Merit were made to three new plants, and seven medals were awarded to groups.

The Fruit and Vegetable Committee only made awards of Medals to exhibits of jams and other preserves.

At the 3 o'clock meeting in the lecture room a lecture on the Wisley Rock Gardens was read by the secretary in the absence of the author, Mr. A. Sarsons.

Floral Committee.

Present: Mr. H. B. May (in the chair), Messrs. W. G. Baker, A. Turner, Chas. E. Shea, W. J. Bean, John Green, R. C. Notcutt, G. Reuthé, C. R. Fielder, J. W. Moorman, W. Howe, T. Stevenson, W. Bain, J. Dickson, C. Dixon, J. T. Bennett-Poë, C. E. Pearson, J. Hudson, F. W. Barr and E. H. Jenkins.

AWARDS OF MERIT.

Chrysanthemum James Fraser (Japanese).—This large exhibition variety has long, narrow florets of deep sulphur-yellow colour. The basal florets are long and curling, the bloom having great depth.

C. Flossy (Single).—A beautiful late white variety, with stiff, pointed florets and cone-like disc. The blooms are about 5 inches in diameter, and there are about two rows of outer segments. Both shown by Messrs. W. WELLS AND CO., LTD.

Carnation Malcolm.—This new variety of the Perpetual-flowering type may be described as an improved Rose Dorée. The colour is salmon-scarlet; it is a fine bold flower, with stout calyx and has excellent form. Shown by the Misses PRICE and FYFE.

GROUPS.

The following Medals were awarded for collections:—

Silver-gilt Flora Medal to Messrs. W. WELLS AND CO., LTD., Merstham, for *Chrysanthemums*. This was the best floral exhibit, and consisted of large groups of big Japanese varieties, interspersed with single and decorative varieties. The new yellow *James Fraser* was displayed in several bold masses, and there were fine flowers of *W. Rigby*, yellow, *Mrs. Gilbert Drabble*, cream-white, and others of this type. A mixed vase of the single pink *Molly Godfrey* and *Heston Pink* was very pretty, whilst *Sandown Radiance* harmonised with *Merstham Jewel*.

Silver Flora Medals to Messrs. ALLWOOD BROS., Wivelsfield, Haywards Heath, for Perpetual-flowering *Carnations*. They made use of a mirror as background, draping it with trails of *Smilax*. The blooms were choice specimens, and mainly of varieties raised by this firm; Messrs. STUART LOW AND CO., Enfield, for Perpetual-flowering *Carnations*. Amongst the numerous varieties, *Gorgeous*, *Pink Sensation*, *White Enchantress*, *Baroness de Brien* and *Mrs. Mackay Edgar*, soft pink, were the more notable. This firm showed a deep pink variety of *Begonia Gloire de Lorraine*, named *Mrs. J. A. Peterson*. Messrs. H. B. MAY AND SONS, Edmonton, for *Begonias*, *Ferns* and *Cyclamens*. Forms of *Polypodium vulgare* showed the degrees of waving, cresting and tasselling found in this beautiful native species; fronds of the more distinct varieties were shown on a stand.

Silver Banksian Medal to Messrs. J. PIPER AND SONS, Bayswater, for an exhibit of shrubs in pots, as at the last few meetings. *Bronze Banksian Medals* to Messrs. W. CUTBUSH AND SON, Highgate, for *Carnations*, *Solanum aculeatissimum* and *Ericas* in small pots; Mr. L. R. RUSSELL, Richmond, Surrey, for ornamental shrubs and berried plants; and Misses PRICE and FYFE, Birchgrove, Sussex, for *Chrysanthemums* and *Carnations*.

Orchid Committee.

Present: Mr. J. Gurney Fowler (in the chair), Sir Jeremiah Colman, Bart., Sir Harry J. Veitch, Jas O'Brien (hon. secretary), J. Wilson Potter, Gurney Wilson, A. Dye, R. Brooman White, W. P. Bound, Walter Cobb, T. Armstrong, J. Charlesworth, Pantia Ralli, S. W. Flory, C. H. Curtis, F. J. Hanbury, W. Bolton, and J. E. Shill.

AWARDS OF MERIT.

Laelio-Cattleya St. Alban (L.-C. *Golden Glory* × C. *Dawiana aurea*), from Messrs. SANDER AND SONS, St. Albans. A superb *Cattleya*, of a clear Indian yellow colour, with a red base to the lip, which has golden-yellow veining. The *Cattleya Mossiae Reineckiana*, which with L.-C. *Zephyra* produced L.-C. *Golden Glory*, gives the shape and form of the flower, and the novelty is practically a rich yellow form of C. *Mossiae* of the best type.

Laelio-Cattleya Invincible var. *His Majesty* (*Dominiana* × *bletchleyensis*), from Messrs. SANDER AND SONS. The sepals and petals are coloured bright purplish-rose; lip deep mulberry-red, with gold lines on the base.

Odontioda Aphrodite (Oda *Diana* × Odm. *eximium*) (see fig. 132) from Messrs. CHARLES WORTH AND CO., Haywards Heath. A distinct *Odontioda*, with the shape and size of *Odontoglossum crispum*. The flower is deep claret

tinted rose, with the light-ground colour showing between the markings, the crest being yellow.

PRELIMINARY COMMENDATION.

Odontioda Armstrongiae (Oda. *Bradshawiae* × Odm. *Armstrongiae*), from Messrs. ARMSTRONG AND BROWN, Tunbridge Wells: a beautiful new *Odontioda*, flowering for the first time. The plant was very small, but it had a large flower of fine shape, closely freckled with brownish-orange colour on a lighter ground, the margin being light purple. The lip was spotted with rose-colour, and the yellow crest had a ruby band in front.

GENERAL EXHIBITS.

Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), showed *Laelio-Cattleya Epicasta* Gatton Glory (C. *Warszewiczii* × *L. pumila*). A large and handsome flower, with rich purple lip.

Sir HERBERT LEON, Bletchley Park (gr. Mr. G. Cooper), showed *Laelio-Cattleya Leoniae*, a pretty hybrid of the L.-C. *bletchleyensis* class, with sepals and petals primrose-yellow tinged with purple, and deep purple lip.

Messrs. CHARLESWORTH AND Co., Haywards

(B.-C. *Madame M. Fournier* × *C. Pittiana*), with lilac sepals and petals, and rose-veined lip.

Messrs. HASSELL AND Co., Southgate, were awarded a Silver Banksian Medal for a group in which were a fine, pure white variety of *Cattleya* Miss Williams, the showy *C. Hasselli*, a fine form of *Laelio-Cattleya* Rubens (var. General Joffre), and the new *Laelio-Cattleya* Joan (L.-C. *Coronis* × *C. Fabia*).

Messrs. ARMSTRONG AND BROWN, Tunbridge Wells, showed a selection of new seedlings. *Odontoglossum Peerless* var. *rotundum*, with a fine white flower, bearing distinct large purple blotches; *Odontioda Cereus* var. *nigrescens* (Oda. *Bradshawiae* × Odm. *Armstrongiae*), of very dark blackish-purple colour, and a fine white-petalled *Cattleya* Maggie Raphael were included.

Messrs. FLORY AND BLACK, Slough, showed *Cypripedium*, *Pyramus* var. *Euphemia*, a large flower, with fine spotting on the dorsal sepal, a very beautiful and richly-coloured *Cattleya* Moira, three forms of *Cypripedium* Christopher, and the singular little *Plenrothallis leptotifolia* with terete leaves, and many two-flowered spikes of cream-white blooms.

following for exhibits of jams and preserves:—Messrs. WESTMACOTT AND Co., 368, Strand, London; Mrs. F. MILLER, Moylen, Marlow; and the CHURCH ARMY (per Miss BALL), Chase Corner, Old Southgate.

NATIONAL DAHLIA.

DECEMBER 6. — The annual meeting of the members of the National Dahlia Society was held on Monday last in the Hotel Windsor, Victoria Street, Westminster. The chairman, Mr. Joseph Cheal, presided, and those present consisted mainly of the officers and committeemen. The secretary, Mr. J. B. Riding, read the committee's report and submitted a financial statement.

EXTRACT FROM THE REPORT.

The Committee is able to report a very satisfactory season over the greater part of the country, though the dry, cold weather of July acted adversely in some districts, whilst in others one of the earliest frosts on record—September 6—completely destroyed the flowers. Happily the frost was not universal, so that many fine displays were exhibited up to a late period of the year. The membership of the Society has only been affected to a small extent by the war.

The exhibition was in every way worthy of the Society and gave the greatest satisfaction to the Committee. The trade classes were hardly so numerous as usual, doubtless owing to a shortage of labour, and other causes due to the war. The amateur classes were keenly contested, and the exhibits reached a high standard of excellence, the number of competitors in some of the classes being far above the average.

The competition for the Cory Cup was held on the same date, and produced three very fine exhibits.

A conference was held at Carr's Restaurant, Strand, on January 14, which was very successful. The President occupied the chair, and papers were contributed on "The Evolution of the Cactus Dahlia," by Mr. James Stredwick, and "The Collette Dahlia," by Mr. J. T. West.

The Committee still maintain that the best policy for the Society is to give attention to all sections of the Dahlia, and to all methods of cultivation, and especially to encourage those sections and varieties which prove most useful for garden decoration.

The chairman, in moving the adoption of the report, considered that they had every reason to be satisfied with the result of the annual exhibition. True, the show was smaller than usual, but that was anticipated. They had arranged to hold the show for 1916 in the R.H.S. Hall on September 12. The financial statement also was satisfactory, for they had a balance on the right side. Mr. Cheal expressed the indebtedness of the Society to their president, Mr. Reginald Cory, who had done more to advance the interests of the Dahlia than any other person. Mr. J. A. Jarrett seconded, and the report was adopted without further comment.

The treasurer, Mr. John Green, referred to items in the balance-sheet. He stated that last year there was a balance in hand of £37 19s. 6d., and as the sum remaining to the Society's credit this season was only some £8 or £9, the expenses next year must be curtailed, and it would probably be in the direction of the Society's publications.

The meeting then proceeded with the election of officers. The president, vice-presidents, chairman, treasurer, secretary, show superintendent, and auditor were all re-elected. The various committees were also appointed. Messrs. Jarrett, C. H. Curtis, and C. G. Wyatt were elected new members of the Classification Committee; Messrs. E. Hawes and G. F. Tinley appointed to fill vacancies on the Finance Committee; and Messrs. C. G. Wyatt, J. T. Lowles, and G. F. Tinley appointed fresh members of the Executive Committee.

Rules 8 and 9, dealing with affiliated societies, were, on the motion of Mr. Jarrett, united and altered to read as follows:—"That local Dahlia or other horticultural societies may become affiliated on payment of a yearly affiliation fee of 10s. 6d. That no Society be considered affiliated until such affiliation has received the sanction of the committee of the National Dahlia Society."

Rule 11 was altered slightly to permit of medals being awarded to a vase of Dahlias, being made to read: "... None of the Medals shall be awarded by an affiliated Society for any seedling Dahlia or for any decoration, or vase of flowers other than Dahlias," by the addition of the last three words.



FIG. 132.—ODONTIODA APHRODITE.

(See Awards by the Orchid Committee, p. 369.)

Heath, were awarded a Silver Flora Medal for a fine group, in which the main features were a large number of finely-flowered *Laelia anceps* at one end, *L. autumnalis* at the other, and in the centre bright rosy-mauve *L. Gouldiana*. A plant of the pure white *L. anceps alba*, with three spikes, represented that old favourite at its best. Arranged with these were a good selection of *Odontoglossums*, *Laelio-Cattleyas* and *Cypripediums*, the novelty among the last-named being the new *C. Marica* (aureum *Surprise* × *insigne* *Sanderæ*), with a large, pure white dorsal sepal, the rest of the flower being yellow.

Messrs. J. AND A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for a group in which were noted good *Cymbidium* Doris and *C. Schlegelii*, some pretty *Odontoglossums* and *Laelio-Cattleyas*, *Sophro-Cattleya* Pearl, S.-C. November, and the white *Laelio-Cattleya* Pearl.

Messrs. STUART LOW AND Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group containing *Oncidium vericosum*, *Vanda coerulea*, some pretty *Laelio-Cattleyas*, *Onciodia Cooksoniae*, *Brasso-Cattleya Brunetta*

Messrs. SANDER AND SONS, St. Albans, showed *Cattleya Evelyn Sander* (Düsseldorfer *Undine* × *Trianae alba*), and *C. Snow Queen*, two good white varieties.

Mr. HARRY DIXON, Spencer Park Nursery, Wandsworth Common, staged a small group of well-flowered Orchids, which included *Oncidium cheiroporum* with six spikes.

FREDERICK J. HANBURY, Esq., Brockhurst, East Grinstead, showed a flower of his new *Laelio-Cattleya* *Adolphaurea* (Adolphus × *Dowiana aurea*), a medium-sized flower of a rich copper-orange tint, the lip being rosy-crimson in front, with small yellow eyes at the base, very attractive and of rare colour.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the chair), Messrs. W. Bates, Edwin Beckett, H. Markham, A. Bullock, J. G. Weston, E. A. Bunyard, O. Thomas, W. Poupert, A. Grubb, A. R. Allan, and A. W. Metcalfe.

Silver Banksian Medals were awarded the

PERPETUAL-FLOWERING CARNATION.

DECEMBER 8.—The nineteenth show of this society was held on Wednesday last at the Royal Horticultural Hall, Vincent Square. Although there were fewer entries than in former years in the Open Section, the classes in Section B, which is open only to gardeners and amateurs, were unusually well filled. The general quality of the blooms was good, and the Carnations, together with various exhibits left over from the previous day's R.H.S. meeting, made an attractive display.

Seven novelties were placed before the committee, but only one received an award.

There was a large stall of cut flowers, plants and fruits, given by members and friends for sale in aid of the R.H.S. War Horticultural Relief Fund.

AWARD OF MERIT.

Mrs. Mackay Edgar.—An especially fine light-pink variety, which may be described as being a greatly improved May Day. Shown by Messrs. STUART LOW AND CO.

OPEN CLASSES.

There were no exhibits in Classes 1 and 2, which included Challenge Cups presented by Messrs. George Monro, Junr., and J. S. Brunton; and there was only one exhibit of 3 vases of 12 blooms each, of American novelties distributed since January 1, 1912. The Challenge Cup presented by the American Carnation Society was awarded to Messrs. W. WELLS AND CO., Mersham, who showed good vases of Laura Webber, Champion and Pink Sensation.

The following 9 colour classes each required 25 blooms of a distinct variety.

The best variety of Enchantress colour, arranged in a vase, was R. F. FELTON, shown by G. LLOYD WIGG, Esq. (gr. Mr. M. Sargent), Rockshand, Mersham; 2nd, Messrs. DODE AND SONS, Parson's Drove, Wisbech; 3rd, Mr. J. C. JENNER, Rayleigh, Essex.

Messrs. W. WELLS AND CO., showing brilliant blooms of Lord Kitchener, were 1st in the class for Baroness de Brien colour; 2nd, Col. F. C. W. RIDEOUT, Clary Carnation Nurseries, Langley; 3rd, Mr. H. T. MASON, Hampton Hill. Messrs. W. WELLS AND CO., with such splendid blooms of Pink Sensation as to win the Silver-gilt Medal offered for the best vase of Carnations in Classes 4 to 12, inclusive, won the 1st prize in the class for a vase of a rose-pink variety; 2nd, Mr. J. C. JENNER.

Col. RIDEOUT, who showed Mrs. C. W. Ward, won the 1st prize for a variety of the colour of which Lawson is the type; Mr. H. T. MASON was 2nd.

The best vase of white Carnations was of White Enchantress, by Mr. J. C. JENNER; 2nd, Messrs. W. DODE AND SONS; 3rd, Mr. H. T. MASON, both with White Wonder. Aviator, shown by Messrs. W. WELLS AND CO., was adjudged the best scarlet variety. Messrs. H. T. MASON and J. C. JENNER were 2nd and 3rd respectively with the variety Scarlet Glow.

Mr. H. T. MASON was 1st for a vase of crimson or clove colour, with excellent blooms of Warrior; 2nd, Mr. J. C. JENNER, who with Snowstorm was the only exhibitor of a vase of any self not eligible in the foregoing.

Sir RANDOLF BAKER (gr. Mr. A. E. Usher), Ranston, Blandford, showing Sunstar, won the 1st prize in the class for a vase of Fancy Carnations; 2nd, Messrs. W. WELLS AND CO.

GARDENERS AND AMATEURS' CLASSES.

Sir DANIEL GOOCH, Bart. (gr. Mr. W. Heath), Hylands Park, Chelmsford, was the only exhibitor of a semi-circular group of plants in flower, but it was a particularly meritorious exhibit and fully deserved the 1st prize, which included Lord Howard de Walden's Challenge Cup.

Of the 3 collections of 12 plants in the class for 3 or more varieties introduced by Mr. C. Engelmann, the best was shown by Sir RANDOLF BAKER, who had large plants of Triumph, Lady Northcliffe and Sunstar. A. W. HARTLEY, Esq. (gr. Mr. W. Holder), Ridgemoor, Englefield Green, was 2nd with smaller but equally healthy plants; 3rd, Sir DANIEL GOOCH.

The best vase of British-raised seedlings was shown by the Countess of DERBY (gr. Mr. W. J. Reed), Coworth Park, Sunningdale, who was awarded Mrs. Norman's Challenge Cup. Sir RANDOLF BAKER was equally successful in the class for 12 blooms of specified varieties, and thus won the piece of plate offered by Messrs. W. Wells and Co.

Of the 3 exhibits in the class arranged by Messrs. Stuart Low and Co., the best was by Sir RANDOLF BAKER, who showed Gorgeous, Satin Robe and Geoffrey Henslow.

The following 9 colour classes each required 5 blooms of specified varieties.

The best vase of Enchantress colour was shown by G. J. C. HARTER, Esq. (gr. Mr. B. Lasking), The Grotto, Reading, who showed blooms of R. F. FELTON; 2nd, J. LLOYD WIGG, Esq.; 3rd, A. H. HARTLEY, Esq.

The Countess of DERBY, showing Baroness de Brien, had the best vase of that colour; 2nd, W. E. THORNER, Esq. (gr. Mr. J. J. Elliott), Reedley House, Burnley.

Sir RANDOLF BAKER won 1st prizes for (a) varieties of rose-pink, (b) "Lawson" colour, (c) crimson or clove, and (d) fancy Carnations.

Capt. D. MACPHERSON (gr. Mr. H. Cullurch), Westlake, Yeovil, showing White Perfection, won the 1st prize for white varieties. A. H. HARTLEY, Esq., with beautiful blooms of Mrs. C. F. Raphael, had the best vase of Self Carnations, and Mr. HARTER was similarly successful with scarlet varieties.

The classes for amateur members, employing not more than a part-time gardener, were very poorly represented. Mrs. W. G. OAKLEY, Hill Croft, Luton, won 1st prizes for 3 blooms of Baroness de Brien colour and for crimson varieties.

NON-COMPETITIVE EXHIBITS.

Various collections of Carnations and other exhibits were left over from the previous day's show, and, in addition to these, Carnations were shown by Mr. J. C. JENNER, Lynwood Nurseries, Rayleigh; Mr. A. F. DUTTON, Iver; and Mr. G. WEST, Datchet.

The following Medal awards were made:—Gold Medals to Messrs. ALLWOOD BROS. and STUART LOW AND CO. Large Silver-gilt Medals to Mr. A. F. DUTTON and Mr. J. C. JENNER. Silver-gilt Medal to Mr. J. WEST. Large Silver Medal to Messrs. WM. CUTBUSH AND SONS; and Silver Medal to the Misses PRICE and FYFE.

SMITHFIELD CLUB.

DECEMBER 6-10.—The annual exhibition of fat stock in the Royal Agricultural Hall, Islington, was held on the above dates, and will be long remembered by farmers as having been the occasion of King George's first fat-cattle championship. The magnificent roan heifer, Windsor Gem, won many other honours. It wanted only the King's presence to make it indeed a Royal Show, for superb beasts from Windsor and Sandringham gained 24 prizes.

Farm and garden are closely linked together, and this most important show of the farming world contained many exhibits of garden interest. Upstairs, in the spacious gallery, as well as in the Gilbey Hall on the ground level, many of the principal nurserymen and seedsmen exhibited perfectly formed roots of gargantuan proportions, as well as sacks and smaller measures of their stocks of pedigree seeds.

The Agricultural Hall is indeed a place of pedigrees—for the vegetable stocks of the best seedsmen have their pedigrees no less than the magnificent cattle, sheep and pigs penned below.

Not only were the dormant seeds laid out in tempting array, but Messrs. Sutton and Sons, of Reading, and Messrs. Carter and Co., of Raynes Park, had germinating trial cases on show, where seedlings of vegetables, flowers and grasses, just bursting through the seed-cases, could be seen. Plant diseases did not receive quite the same attention as in former years, though we noted on Messrs. Sutton's stand a very bad example of black scab of Potato, preserved in a large glass jar of spirit.

Besides the great variety by Messrs. SUTTON AND SONS and Messrs. CARTER AND CO., seeds and roots were exhibited by Messrs. E. WEBB AND SONS, Stourbridge, who made interesting variety with baskets of Chinese Artichokes and ripe Tomatos; Messrs. JOHN K. KING AND CO., Coggeshall, Essex; Messrs. TOOGOOD AND SONS, Southampton; Messrs. E. W. KING AND CO., Coggeshall; and Messrs. HARRISON AND SONS, Leicester.

Potatoes are always an important feature of the Smithfield Club Show, and, although novelties were very few this year, many of the noted raisers and dealers showed samples of their best tubers. The outstanding novelty was Gordon Castle, a new main crop Potato, which has won most favourable reports from independent trials. It was shown by Messrs. SUTTON AND SONS. Judging from the frequency with which red-skinned varieties were shown, it would seem that they are popular with farmers. From the gardener's point of view many of the "reds" have a weak point in their very deep eyes—a fault which, however, is greatest in the round and pebble-shaped sorts, for such kidney-shaped varieties as King Edward VII. and Mr. Breese are quite as shallow-eyed as the average white-skinned tuber. Among the exhibitors of Potatoes were such well-known firms as Messrs. FINLER AND SONS, of Reading; Mr. W. J. REID, Montrose; Mr. W. J. CAMPBELL, Dalkeith; Mr. T. A. SCARLETT, Edinburgh; Messrs. LITTLE AND BALLANTYNE, of Carlisle; W. DENNIS AND SONS, of Kirtom; and Mr. R. W. GREEN, of Wisbech.

Gathered fruits, and trees and bushes of Apples and Pears, also formed an important part of these gallery and small hall exhibits. In the latter place Messrs. CANNELL AND SONS, of Eynsford, had a large corner stand heaped high with a great variety of rosy-cheeked Apples, for which their county is famed. The KING'S ACNE NURSERY CO., Hereford, also showed superb fruits and sturdy trees, whilst Messrs. DICKSONS, LTD., Chester, showed, besides their fruit, specimens of meadow and lawn grasses and hedge bushes.

NATIONAL CHRYSANTHEMUM.

DECEMBER 8.—At the last meeting this season of the Floral Committee, which was held in the Essex Hall, Strand, London, on Wednesday last, there were many novelties submitted for award. Five First-class Certificates and one Card of Commendation were granted to novelties.

FIRST-CLASS CERTIFICATES.

Crimson Velvet.—A charming decorative single of rich crimson colour, which is brightened by a broad golden zone. The narrow florets are in two or three rows, and are slightly twisted at their tips. Shown by Messrs. W. WELLS AND CO., LTD.

December Bronze.—A splendid golden bronze market variety of Cranford Pink type. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

James Fraser (see R.H.S. Awards, p.369).

Yellow Perfection.—An especially fine rich yellow single of large size and unusually small disc. The florets have good substance, and are attractively reflexed at the tips. Shown by Mr. NORMAN DAVIS.

December Beauty.—This is a most attractive single of very large size. The broad, stout ray florets are of reddish bronze colour, shaded yellow at the tips, with a yellow zone. Shown by Mr. N. DAVIS.

CARD OF COMMENDATION.

Snowspray.—A medium to small sized white single of value in spray form for decoration. Shown by Mr. P. LADDS.

* * * NEW POSTAL RATES.—Contributors and correspondents are reminded that under the new postal rates, which came into operation on November 1 last, letters bearing a penny stamp must not weigh more than one ounce. The postal charge for letters exceeding one ounce, but not exceeding two ounces, is twopence, and there-after at the rate of 2d. every two ounces.

Obituary.

JOHN R. JACKSON.—We regret to record that, as we go to press, we receive the news of the death, on the 4th inst., of Mr. J. R. Jackson, after a long illness. Mr. Jackson was advertisement manager and confidential representative of Messrs. Clay and Sons, fertiliser manufacturers, with whom he had been employed for five or six years. Before that he had been for twenty-five years with Messrs. W. H. and L. Collingridge, where he obtained much of the knowledge of advertising methods which he applied with such success in the business of his late employers. He had been ill for two months, having contracted pleurisy in the early autumn, which produced complications. He was not only an efficient, conscientious worker, but of a genial and kind-hearted nature.

JOHN LAMB.—From *The Florists' Exchange of America* we learn of the death of Mr. John Lamb, a Rose grower, who died in New Jersey on November 4. He was born in Ireland 74 years ago, and emigrated to America when a young man.

PATRICK E. DOLAN.—We regret to record the death of Mr. P. E. Dolan, announced in the American journal, *Horticulture*, as having taken place on November 6, at Hartford, Conn., U.S.A. Mr. Dolan was born in Athlone, Ireland, in 1849, and went to America in 1866, building up a successful business as landscape gardener and florist.

DEBATING SOCIETIES.

DUMFRIES AND DISTRICT HORTICULTURAL.—The annual general meeting of this society was held in the Wesley Halls, Buccleuch Street, Dumfries, on November 27. In the absence of the president, Provost Arnott, through illness, the chair was occupied by Mr. A. W. McAlister. In his letter apologising for absence, Provost Arnott expressed a wish to be relieved of the office of president, owing to the increase in his municipal duties through his reappointment as Provost of Maxwelltown, but the meeting agreed to appoint a deputation to ask him to continue, and reappointed him as president. The vice-presidents were re-elected, and a committee appointed. Mr. J. L. Armstrong consented to act as Secretary and Treasurer until a successor can be appointed. His financial statement showed a credit balance on reserve of fully £50, with a small amount on current account after granting £55 to war relief funds.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.—The last of the series of lectures for 1915 organised by the above society was held in the Religious Institution Hall, Glasgow, on the 1st inst. There was a large attendance, presided over by Mr. D. G. Purdie, chairman of the directors, who introduced the lecturer, Provost S. Arnott, Maxwelltown, his subject being "Alpine Flowers," with lantern illustrations. The lecturer gave a review of the Alpine plant from a horticultural standpoint, referred to its requirements, and how it should be cultivated. This part was followed by a review of the most useful genera for British gardens, and especially for Scotland.

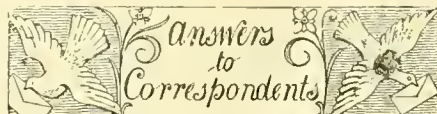
READING AND DISTRICT GARDENERS.—The fortnightly meeting was held on the 29th ult. in the Abbey Hall. The subject for discussion was "Vegetables for Exhibition and Otherwise," and was introduced by Mr. George Ellwood, Swanmore Park Gardens, Bishops Cleeve. In the Onlookers' Gift Competition for three dishes of vegetables, open to single-handed gardeners, the 1st prize was won by Mr. A. W. Eggleton, the Ashton Lodge Gardens, and the 2nd prize by Mr. W. Clements, Eastgate House Gardens. In the Points Competition Mr. H. H. Fulker, Elmhurst, received 1½ points for vegetables. Mr. J. F. Tubbs, The Bear Wood Gardens, staged a splendid collection of Apples.

GARDENING APPOINTMENTS.

Mr. Alexander Melville, for some time with Messrs. R. B. LAIRD, DICKSON AND SONS, LTD., Edinburgh, and formerly Gardener at Dundas Castle, South Queensferry, N.B., as Gardener to LADY LEWIS, The Grange, Rottingdean, Sussex.

Mr. J. W. Poinson, for the past five years Gardener to O. F. WATERFIELD, Esq., Cuddington Grange, Northwich, as Gardener to E. Tootal Broadhurst, Esq., The Manor House, North Road, Congleton, Cheshire.—[Thanks for 1s. for R.G.O.F. box.—Eds.]

Mr. A. Rogers, for the past 19 months Gardener to Newport Borough Asylum, Monmouth, and previously for five years Gardener to J. H. WOODINGTON, Esq., Clevedon, Somerset, as Gardener to Mrs. JOSEPH RICHARDSON, Springfield, Lishorn, Co. Antrim, Ireland.—[Thanks for 1s. for R.G.O.F. box.—Eds.]



BOOKS ON THE AGRICULTURE OF PALESTINE: A. H. With reference to your enquiry for books on the agriculture or horticulture of Palestine, we only know of the following:—*Agricultural and Botanical Explorations in Palestine*, by Aaron Aaronsohn. This is Bulletin No. 180 of the Bureau of Plant Industry of the U.S. Department of Agriculture, Washington, to which you should apply. It was published in 1910.

CHRYSANTHEMUMS FOR EARLY AND LATE BLOOMING: W. W. T. Your question is somewhat vague. You do not state whether you wish to grow disbudded blooms or sprays, or to cultivate the early varieties in pots or in the open ground. The following varieties should prove suitable, and should cover the season from September to late December. Those numbered 1 are best disbudded; those numbered 2 are good either disbudded or in sprays; and those not marked are good only as sprays. Early varieties—yellow: 1 Polly, Carrie, Horace Martin, 1 Le Pactole, 1 Cranford Yellow and 1 Cranfordia; red: 2 Almirante, 2 Alcalde, 2 Goacher's Crimson and 1 Crimson Polly; white: 2 Countess, 1 Framfield Early White, 2 Débutante and Roi des Blancs. Mid-season varieties—yellow: 2 Yellow Money-maker, 2 Soleil d'Octobre, 1 Romance, 1 J. W. Streeter; red: 2 Market Red, 2 Kathleen Thompson; 1 William Vert, 1 Foxhunter, 1 Mrs. Andrew Walker, 1 Mrs. W. A. Read; white: 2 Money-maker, 1 H. W. Thorp, 1 Mrs. Roots, 2 William Turner, 1 Maud Jefferies. Late varieties—yellow: 2 December Gold, 1 Golden Thompson, 1 Nagoya and 1 Yellow Victoria; red: 2 Baldock's Crimson, 2 Miss A. Brooker, 2 Black Prince and 1 Mrs. W. J. Crossley; white: 2 Heston White, 1 Mrs. J. Thompson, 1 Autocrat, 2 Mrs. W. Buckbee, 2 Niveus and 1 Victoria. Princess of Wales is the best purple Violet for cultivation in frames or in houses out-of-doors. The older variety Williana, though not so large, may prove a little more hardy and prolific.

DESCRIPTION OF GARDENER: P. E. H. A journeyman is entitled to describe himself as a "gardener." The description "garden labourer" would apply to an unskilled man.

GRUBS FOR IDENTIFICATION: A. M. The larvae are those of the Narcissus bulb fly (*Merodon equestris*). It is one of the pests scheduled by the Board of Agriculture, and was described and illustrated in *Gard. Chron.*, October 12, 1912, p. 278.

MEALY BUG ON PEACH TREES. Gas tar is commonly employed for destroying mealy bug on vines, and you would probably find it an effective remedy in the case of Peaches. A good recipe is three parts clay with a little water, and one part gas tar, thoroughly mixed and boiled together. The mixture should be applied by means of a paint brush when cold. Care must be taken that the specific does not touch the buds.

NAMES OF FRUITS: W. Keen. 1, Queen; 1a, Emperor Alexander; 2, Minchull Crab; 3, Yorkshire Beauty syn. Greenup's Pippin—Red Hawthornden.—J. E. 1 and 3, Beurré Diel; 2, White Doyenné; 4, Hornead's Pearmain; 5, Reinette de Caux.—P. B. B. 1, Lane's Prince Albert; 2, King of the Pippins; 3, Cox's Orange Pippin; 4, Lord Derby; 5, Lady Henniker; 6, Prince Bismarck.—W. B., L. and S. Franklin's Golden Pippin.—E. Tansley. 1, Beurré Clairgeau; 2, Catillac; 3, 4 and 5, decayed on arrival.—W. E. P. Uvedale's St. Germain, usually considered a good stewing Pear.—A. O. W. Knight's Monarch.—C. C., Worcester. 1 and 2, decapey; 3, Royal Jubilee; 4, Nanny.

NAMES OF PLANTS: J. H. Herdman. *Cotoneaster fridiga*.—R. H. (Diss). 1, *Ruellia Portellae*;

2, *Fittonia Pearcei*; 3, *Vinca rosea*; 4, *Asclepias curassavica*; 5, *Brunfelsia calycina*; 6, *Euphorbia splendens*.—M. S. F. *Pyrus terminalis*.—H. V. 1, *Dendrobium nobile*; 2, *Diosma ericoides*; 3, *Begonia parvifolia*; 4, *Plumbago rosea*; 5, *Maranta Massangeana*; 6, *Pilea muscosa*.

NURSERY EMPLOYEES' WAGES: J. S. We gather that you were employed subject to a week's notice, and therefore without your consent your employer could not alter your wages without giving you previous notice for that period. The fact that meanwhile he was willing that you should work for shorter hours would not affect the point. You can, therefore, claim your full wages for the week in question.

PTERIS DISEASED: G. S. The Fern is attacked by eel-worm (*Tylenchus devastatrix*). As the worms breed in the soil, you should remove all the soil around the roots, and replace it with fresh compost, mixed with powdered sulphur; but before completing the operation powder the lower portion of the stems of the Fern with sulphur as a further precaution.

ROSE QUERIES: W. B. (1) Raising seedling Briars from hips. The seeds should be sown at once in rather light, gritty soil, preferably in rows made about 1 foot apart. Cover the seeds with ½ inch of soil, and take measures to protect the seeds from birds and mice. The yearling plants must be transplanted, unless you sow the seeds very thinly, in which case the Briars should be fit to transplant for budding the following year. (2) Standard Briars have usually very few fibrous roots, and they require the longer period for root formation. (3) The variety Colleen grows something like Killarney, E. Bohane after the style of G. C. Ward. Gorgeous resembles Earl of Warwick in habit, and G. A. Hammond is more after the style of Duchess of Wellington. H. V. Machin is a dwarf grower, somewhat like Marquise Litta; whilst Hoosier Beauty is stronger than Richmond. All are good bloomers. The bloom of H. V. Machin is very large, and opens more slowly than the others.

VIOLETS IN WINTER: L. W. E. You do not state what methods you pursue or the varieties you propose to grow, but both single and double sorts may be grown with success in winter. Old plants may be divided into single crowns in April, but a better plan is to employ runners, as divided plants do not produce such large flowers. There should be no difficulty in obtaining a good supply of runners if frame-culture is practised. Violets grow best in borders facing west. The soil should be specially prepared in the winter months by being dug, adding a considerable proportion of leaf-mould and burnt garden refuse. The runners or divided crowns should be planted firmly in rows made one foot apart, care being taken not to bury the crowns. The after-treatment will consist chiefly of watering as often as necessary, and keeping the border free from weeds by frequent surface hoeing. After the plants have become established the runners must be kept pinched off during the next six months. The atmosphere should not be too close and warm; the chief requirements are abundance of light and air and protection from severe frosts. Allow the flowers full time to develop to their full size. Plant the clumps in frames near the glass in September or October, using a liberal quantity of compost with the surface-soil. Although November, December, and January are the most sunless months, if the plants are treated as advised, and not unduly forced in the early stages, no difficulty should be experienced in having quantities of flowers. The two greatest enemies to Violets are red spider in the summer and damp in the winter.

Communications Received.—J. H.—A. L.—S. A.—E. B.—W. and D. G. A.—H. E.—H. M.—H. J. E.—M. I. N.—A. A.—A. W.—M. B.—E. S. K.—C. W. T.—J. A. P.—W. A. C.—W. H. W.—J. G.—J. B. R.—F. J. A.—M.—E. M.—H. L.—C. S. G.—R. P. B.—R. J. W.—A.—B. L.—A. L. N.—A. T. H.—E. R.—W. B. H.—C. B.—H. H. W.

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THE PASSING OF THE STOVE.

ONE can hardly help casting a wistful eye upon the old stove-house as it falls into decay, or is, perhaps, ruthlessly hacked to pieces by the unsympathetic hands of the carpenter to make way for more modern buildings. Forty years, or even twenty-five years ago underneath that same roof there stood noble plants, tied into fantastic shapes or led up under the glass, displaying a wealth of exotic bloom and foliage, a source of pleasure to the owner and gardener alike. How we planned and worked to maintain regularity of temperature! How assiduous we were to shade the plants or admit light! Here in those days we used to grow the plants for exhibitions; what "timing," what care, what hopes rested upon those specimens! At five in the morning we thinned the Grapes, and at dusk we pruned the Cucumbers, so as to be in attendance upon the stove exhibition plants during the day. To sponge the leaves or control the growths, or to feed the plants in a sweltering heat, was pleasing excitement, a never-failing source of discussion and comparison. And now the old house is tottering, the plants have gone or are fast going—save for a few here and there in public gardens—and soon the old-time

gardening as we once knew it will become a lost art.

In horticultural publications there are numberless articles relating to the cultivation of stove plants; yet we can hardly attribute to this branch of gardening much antiquity. Charles McIntosh, of Dalkeith, published his book, *The Greenhouse, Hot-house and Stove*, in 1838, and the stove as we now know it cannot have existed long before that date. It seems certain that some growers even at that period had experiences of the foibles of many plants. Probably the difficulties arose from attempting to grow the plants in unsuitable structures; also difficulties must have arisen from the inclusion of such cool plants as *Brugmansia suaveolens* and *Plumbago rosea*. Many of the plants were raised annually from seeds, and this probably helped to keep back insect pests so far as they are concerned; but to have such plants as those mentioned in the stove must have been breeding-grounds for numerous pests. McIntosh enumerates about three hundred species suitable for the "Humid Stove," enough surely to try the capabilities of the most industrious gardener. Most of the plants have, however, now passed out of cultivation. A few still linger, such as *Ixora*, *Strelitzia*, *Gloxinia* and *Gloriosa superba*. *Petrea volubilis* is still a favourite climber.

Many years ago, I remember, we had *Livistona chinensis* (*Latania borbonica*) and *Acanthophoenix* (*Areca*) *crinita* (*Herbstii*), two Palms, both highly ornamental. The former has long flourished in the conservatory in a temperature much lower than the stove; the last-named species is very graceful, and remarkable on account of the formidable spines round the lower part of the stem. *Sansevieria cylindrica* and *S. guineensis* (*Javanica*), and *S. zeylanica* are very curious plants. The species last named we have with us still. The specimen is comparatively small; the parent plant was thrown away a few years ago, having existed for at least twenty-five years without being re-potted! The coloration of the leaves is striking, being in green and white waves and suggestive of the markings of some reptile. *Petrea volubilis* is a Mexican climber which wound itself round the iron bars of the roof and flowered from spurs, much like *Wistaria sinensis*. The racemes are about a foot long, the sepals lavender and more persistent than the corolla, which is a deep shade of mauve. The plant flowered and grew upon the least possible fare. Originally it occupied an 8-inch pot, but threw out its roots into the gravel covering the bench for a length of 12 feet. Sometimes we damped between the pots of the stove with manure water, and probably the plant benefited from that. *Cuculigo recurvata variegata* is an East Indian plant that was held in high esteem on account of its tall, recurved, variegated leaves, almost Palm-like appearance and an excellent subject for indoor decoration. The *Allamandas* are still widely grown and need no description. We used to prop the plants near the glass after potting and pruning, and anxiously awaited indications of growth. As soon as possible the

points were trained upwards from the balloon on the roof; as the flowers opened and exhibition day approached the shoots were carefully tied down into position on the balloon. The value of an *Allamanda* in the group of twelve flowering plants was great, and consequently much attention was given it and great care exercised in its transit to the show. Among the *Alocasias* there were some beautiful plants; some of them kept the stove furnished even in winter with foliage at once striking and interesting. *A. zebrina* was one of the best with its large, handsome, arrow-shaped leaves, and the petioles banded with pale green and dark olive. *A. metallica* we have still, and *A. macrorhiza variegata*. Both are remarkable plants of great beauty. The latter made a handsome specimen 5 feet through. Its leaves are blotched white and green irregularly; it is one of the finest plants ever introduced. Nearly related to this genus is *Colocasia Antiquorum*, indeed an old plant in our garden; it is said to have been introduced in 1551. We used to call it "*Alocasia purpurea*." The plum colour of the petioles and veins is glossed over with a faint silvery pile. The plant grows to nearly 6 feet high and as much through. *Aristoloechia elegans* was always a wonder. The "*Dutchman's Pipe*" was looked upon as a rarity; its rich maroon and grey colouring and quaint appearance excited a deal of interest. We have always had a good collection of *Codiaeums* (*Crotons*). Nearly all the old varieties have gone—*interruptum*, *pictum*, *Queen Victoria*, *Veitchii recurvum* and *Youngii*. These are now replaced by others of splendid and varied colours. The *Dipladenias* were considered among the aristocrats of the stove, difficult to grow well and highly prized when in flower. I well remember the *Gardenias* with their pure white blossoms—and the mealy bug! In these days, with excellent fumigants, one can hardly realise how persistent we had to be with the sponge to keep the pests in subjection. *Euphorbia splendens* is still kept for the sake of old times, only. *Medinilla magnifica* is indeed a magnificent plant—a prince among plants. It is a pity for the stove to disappear if this has to go. Of *Anthuriums* we still have *A. crystallinum*, *A. Warocqueanum*, *A. Veitchii*, *A. Scherzerianum* and *A. Andraeanum*. *Cyanophyllum magnificum* has been growing here for forty years; I take cuttings, or put a pot around the stem and root it there by the process of "ringing." *Rondeletia speciosa*, *Thyracanthus rutilans*, *Tabernaemontana coronaria*, *Stephanotis floribunda*, *Toxicophlaea spectabilis*, *Vinea rosea*, the *Philodendrons*, *Poinsettias*, *Paullinia thalictrofolia*, *Calatheas*, *Ixoras*, *Hibiscus Rosa-sinensis*, *Haemanthus Dracaenas*, *Cissus discolor*, *Clerodendrons*, *Caladiums* and *Eucharis* are all included in the collection here. These plants will probably give way to more modern subjects; but, after all, I doubt if the future has anything more truly regal than the well-filled, well-grown plants of the charming old stove that we loved so well in the glorious past. H. W., *Redruth*.

NOTES ON CONIFERS.

XII.—CUPRESSUS NOOTKATENSIS.*

ALTHOUGH less commonly cultivated than the Lawson Cypress, the Sitka Cypress (long known in gardens as *Thujopsis borealis* and in its native habitats as the Yellow Cedar) occupies an important place among our hardy Conifers. It grows vigorously on most soils, and a tree of, say, 40 to 50 feet high, with its pendulous sprays of dark-green foliage, is a decidedly ornamental subject.

This tree is sometimes confused with *Cupressus Lawsoniana*, but there need be no difficulty in distinguishing it, if the following points are noticed. The foliage is coarser and of a duller green than in the Lawson Cypress, and emits a characteristic disagreeable odour, especially when rubbed. The cone scales have prominent triangular-pointed processes, which are much smaller and reflexed in *C. Lawsoniana*, while the seeds of the latter have conspicuous resin vesicles which are absent in *C. nootkatensis*.

The Sitka Cypress is a native of the Pacific Coast region, occurring in the Cascade Mountains of Northern Oregon, Washington, British Columbia and Alaska to Prince William Sound. It sometimes attains a height of 120 feet, with a trunk 18 feet in girth. It is generally associated in the forests with other Conifers and some hardwoods.

Cupressus nootkatensis was discovered by Menzies in 1793 at Nootka Sound, and his specimens were described by Don in Lambert's great work, the *Genus Pinus*, more than thirty years later. It was first cultivated in the Petrograd Botanic Gardens about 1850, and was afterwards distributed in France under the name of *Thujopsis borealis*, Carrière†; it was also sent out by the French nurserymen as *Pinus Tschugatskoy*‡. Lindley§ states that it was introduced into England by Pontey, of Plymouth, about 1853.

The largest tree recorded by Elwes¶ is one which he measured at Eggesford, Devon, in 1903, and was then 61 feet by 5 feet 7 inches, and a very good shape. In the same year I measured one at Eastnor Castle, and made it 56 feet high by 3 feet 6 inches in girth. There are two fine trees at Tortworth, one of which is about 55 feet by 4½ feet. At Hewell Grange, near Redditch, Worcester, there is a vigorous tree 60 feet by 4 feet 4 inches. Elwes also records good specimens at Killerton and Streat-ham Hall, near Exeter, Bayfordbury, Shadwell Court, near Thetford, and Leonardslee. There are no very large trees in Scotland; in Ireland the best recorded is at Woodstock (55 feet).

Considerable difficulty has been experienced in raising this Conifer from seed, which sometimes remains dormant for more than a year before germinating, and Elwes mentions cases showing that the seed is somewhat uncertain in its germination. The wood of the Yellow Cedar is among the best known for cabinet-making, and has been exported to China, where it is used as a substitute for Satinwood. A. Bruce Jackson.

* *Cupressus nootkatensis*, Don, in Lambert, *Genus Pinus*, II, 18 (1824); Masters, in *Journ. Linn. Soc. (Bot.)*, XXXI, 362 (1896); Sargent, *Sitka N. Amer.*, X, 115, t. 530 (1896); Kent, *Veget. N. Amer.*, 217 (1900); Clifton-Baker, *Illustr. Conif.*, II, 73, fig. 1 (1900); Elwes and Henry, *Trees of Great Britain and Ireland*, V, 1194, t. 308 (1910); Bean, *Trees and Shrubs*, I, 448 (1914).

† *C. nootkatensis*, Hooker, *Fl. Bor. Am.*, II, 165 (1839); Murray, in Lawson, *Pinet. Brit.*, II, 190, t. 34 (1869).

‡ *Chamaecyparis nutkanensis*, Spach, *Hist. Veg.*, XI, 333 (1842); Syme, in *Gard. Chron.*, XI, 560 (1879).

§ *Chamaecyparis nootkatensis*, Sargent, *Trees N. Amer.*, 83 (1905).

¶ *Thujopsis borealis*, Carrière, *Conf.*, 113 (1855).

† See *Gard. Chron.*, 1854, p. 727.

‡ See *Gard. Chron.*, 1856, p. 342.

§ See *Gard. Chron.*, 1854, p. 727, and 1856, p. 772.

¶ *Op. cit.*, V, 119.

¶ See Elwes and Henry, *Op. cit.*, V, t. 308.

Cupressus nootkatensis is much less variable in cultivation than *C. Lawsoniana*. The most notable variety is, perhaps, var. *pendula* (see fig. 134). There are several forms with variegated foliage.

ORCHID NOTES AND CLEANINGS.

LAELIO-CATTLEYA GOLDEN WINGS.

FOLLOWING the interesting series of hybrids with *Cattleya fulvescens* (Forbesii × *Dowiana aurea*), already recorded, Mr. H. G. Alexander, Orchid-grower to Lieut.-Colonel Sir Geo. L. Holford, K.C.V.O., C.I.E., Westonbirt, Tetbury, sends us a flower of the *Laelio-Cattleya*

in the centre. The stiff substance of *C. Forbesii* and some of the peculiarities of its lip can also be traced.

R.H.S. CERTIFICATED ORCHID PORTRAITS.

In 1897 the Royal Horticultural Society commenced with the first meeting in the year the practice of preparing coloured drawings of all Orchids securing First-class Certificates or



[Photograph by E. J. Wallis.]

FIG. 133.—CUPRESSUS NOOTKATENSIS: BRANCH WITH MALE AND FEMALE CONES.

Golden Wings, raised from *Cattleya fulvescens* and *Laelio-Cattleya Ophir* (*L. xanthina* × *C. Dowiana aurea*). It is a specially attractive addition to the class of yellow *Laelio-Cattleyas*, the sepals and petals being bright cowslip yellow with an old-gold shade. The labellum, as is usual with *C. fulvescens* crosses, has much of the form of that parent, and in the disposal of the darker markings on rose ground on the lip which has a crimped margin, and rich red shade

Awards of Merit. The pictures now number 2,257, and on the back of each are recorded the name, derivation, and other particulars.

The main use of the pictures is to have records for comparison with new exhibits of the same species or parentage, and the illustrations have been of great value to the Orchid Committee in making their awards. The series of pictures built up progressively discloses in cresting points in the rise and fall of some of the

early favourites, and the continued favour shown to other classes, such as Cattleyas, Laelio-Cattleyas, Odontoglossums, and Cypripediums.

The records of the pictures have one specially interesting point, and that is the proof they give of the great advance made by hybridists and the general acceptance by orchidists of the results of their work.

In the first year of the pictures (1897) sixty-four out of one hundred and seven Orchids painted were of imported species, varieties of species, or natural hybrids; while in 1915, out of some eighty, only five species and varieties appear, and from first to last the records show a steady flow between the two extremes. The scarcity of novelties in species abroad, the cost and risk of collecting and importing large quantities to endeavour to secure novelties, and the much wider scope open to the raisers of the home product, have brought about a change which is more interesting and satisfactory than the old-time methods and results.

GARDENING FOR WOMEN.*

(Concluded from p. 360.)

HERE are some figures from lists which were compiled last year:—Out of 71 gardeners in private posts, 11 were single-handed, 38 had 1 or 2 assistants, 16 had 3 or 4 assistants, and 6 had 5 to 9 assistants. In 12 cases one of the under-gardeners was a woman. In market work women on the whole have done well, though not on a very big scale, their holdings varying in size from 1 to 20 acres, the average being 2 to 5. For this branch, women as a rule combine, and work two or three together, the crops usually varying according to the demand in their particular district. Near towns the holdings will be smaller. Most crops are raised under glass [hothouse plants, fruit and flowers], and the produce is disposed of locally. Further in the country there will probably be more ground held, and the crops will be vegetables and hardy fruit and flowers, with the addition of poultry keeping. In the first category I can mention two women who specialise in Carnations and Chrysanthemums, two who grow mainly Violets, others who raise Melons, Tomatos, Violets and half-hardy plants. Then we have a specialist in Sweet Peas; she started work twelve years ago on Mendelian lines with one acre of land; she has raised some excellent varieties, and now has fourteen acres with 10 miles of Sweet Peas, grown mainly for seed. A favourite combination is nursery work, jobbing and landscape gardening, but a difficulty seems to be that as one cannot depend on one's customers having the same taste as oneself, the plants one raises cannot always be disposed of. And this brings me to jobbing gardening itself. Many of the women who take up gardening are from the towns, and are tempted to try and bring a little more reality into the town garden. We all know the average town jobbing gardener, more or less of a labourer—mostly less than more; he cuts the grass and tidies the beds, and plants Pelargoniums and Petunias, Lobelias, etc. Women are ambitious to do better than this, and I think so far they have been fairly successful. This is a branch of gardening which calls for a good deal of patience and thought, and has possibilities. It often leads to advisory work, which is both interesting and profitable.

On the whole, the woman gardener can make the best use of her training by teaching—either in schools, in sanatoria, or in benevolent institutions. Here she is not entering into direct competition with men, for it is work which they do not seem to care for, and for which she is better fitted than they are.

Apart from a knowledge of gardening, there are certain qualifications necessary for the successful teaching of this subject to children, or

to older people suffering possibly from some weakness or infirmity—a love of nature (human and otherwise) and of one's work, an aptitude for teaching, great patience and perseverance. It is educational work of a very high order, aiming at drawing out the best side of human nature. With children, the observing of what goes on in the outdoor world, both among plants and animals (because nature study is often combined with this form of gardening) will help to give them a much better outlook on life.

Many of us feel that gardening—and by this word I mean outdoor work, digging, planting, weeding, the true gardening—has an influence for good, by helping us to be understanding and patient and unselfish. To reverse this axiom, we cannot be true gardeners unless we have these qualities, and unless we learn that plants

part) of the cure. Of one of these—a home for women inebriates—the head gardener (a woman) gives an extremely satisfactory account. Every patient, especially those whose nerves are badly unstrung, has to do a certain amount of outdoor work, provided her health allows of it. There are large flower and vegetable gardens, orchard and market houses. The head has two men and a woman assistant under her, otherwise all the work is done by the patients; they do everything in the market houses except the wheeling in of soil. The gardener studies the patients, sees that each has work which she likes, and leaves them without supervision as much as possible, so that they may feel responsibility. She has come to the conclusion that the best and most lasting cure for inebriety is plenty of fresh air, combined with exercise that stimulates the intelligence. The fresh air and discipline steady the patients' nerves, and assist them to recover their self-control. Gardening has also been introduced at a home of detention for young offenders (female), but I have not been able to ascertain if the effort was successful.

I hope I have not led you to think, by my praise of women gardeners, that I consider them superior to men. We are ahead perhaps in some things, but behindhand in many others; we still have a lot to learn, but perhaps also something to teach. We have entered the profession to supplement, not to supplant. The best work is always done when men and women collaborate; besides, the good worker need never fear competition. The labourer is worthy of his hire.

In preparing my paper, I have been indebted to the articles by Mrs. Roland Wilkins, which appeared this year in the September and October numbers of the *Journal of the Board of Agriculture*.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS—SEASONABLE CULTURAL NOTES.

THE present is a good time to insert cuttings of Japanese and Incurved Chrysanthemums for the production of large blooms next November. Many varieties are best grown on the natural break principle, and therefore require a long season of steady growth. If cuttings are not taken until February it is difficult to obtain a good result. A few odd varieties will produce blooms from such late propagation, but for a general collection in both sections early propagation has the best chances of success. Cuttings 3 inches long taken from the base of plants that flowered this autumn or have been specially grown for the purpose of producing cuttings should be selected. Take off the lower pair of leaves and cut square below a joint. Insert each cutting firmly in the centre of a 2½-inch pot in sandy soil. Well water to settle the soil firmly about the cutting. Under a hand-light, propagating frame or temporary structure in a cool house is a good place to strike the cuttings. If on a latticed stage, cover this with slates and ashes to exclude air. Remove the light every morning for an hour, to dissipate condensed moisture, and wipe the inside of the glass in the evening. The soil will not often require water until the cuttings have formed roots, which will be in about three weeks' time. Directly this takes place, tilt the glass a little, admitting air, and increase the amount as the roots grow. When sufficient growth has been made, and the leaves will not flag in consequence of exposure, place the plants on a shelf close to the glass in a cool house, where they will obtain air freely.

Some persons prefer to strike cuttings in a cold frame, where they do equally well so long as the weather is favourable; but during a time of frost lasting, say, a month, the cuttings cannot make any progress. *E. Molyneux.*



FIG. 134.—WEEPING VARIETY OF CUPRESSUS NOOTKATENSIS.

(See p. 374.)

are like children, each with a different nature. We can make them do our bidding, and can bring out the best that is in them by right treatment, neither spoiling them nor treating them harshly. If we endeavour to understand them and find out what they need, they will reward us. Women have, to a great extent, realised the effect of gardening on character, and have turned it to account in order to help others. Much good work is being done in this way. There are the London children's recreation gardens for the benefit of poor children, who thus have the chance of not only seeing things grow, but of growing them themselves.

Then there are the sanatoria, where gardening is introduced as part (often the main

* A paper read before the Kew Gardeners' Debating Society by Miss L. H. Joshua.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LVIII).

L'HORTICULTURE HOLLANDAISE ET LA GUERRE.

La situation favorable que la guerre a créée pour certaines branches de producteurs horticoles en Hollande, ne paraît pas exister pour les pépiniéristes, spécialement pour ceux de Boskoop. L'organe du Conseil horticole néerlandais décrit en couleurs assez sombres les difficultés dans lesquelles ils se débattent.

Il paraît établi que pendant la campagne 1914-1915, les ventes n'ont atteint que le quart des années ordinaires. Cette saison, les expéditions sont plus importantes, mais restent cependant notablement en dessous de la moyenne. C'est ainsi que la gare d'Alfen dont les expéditions atteignent normalement 600 wagons, en a enregistré 250 seulement. Aussi les appréhensions des producteurs de Boskoop deviennent vives car leurs produits sont, plus que tous autres, articles de luxe dont le public continue à se passer, malgré le retour graduel aux conditions de vie normale.

L'Allemagne a demandé en ordre principal des plantes pour le forçage. Les Rhododendrons à floraison hâtive, sans doute en remplacement des Azalées de l'Inde, les *Prunus triloba*, *Malus* et *Wisteria* ont été l'objet de transactions suivies avec ce pays. Les *Roses Polyantha* ont également été demandées.

On en conclut que les horticulteurs allemands s'attendant à ce que la demande pour plantes fleuries et pour fleurs soit encore intense au printemps prochain. En ce qui concerne les arbustes de pleine terre, la clientèle est très réservée et les commandes de *Buxus*, *Taxus*, *Conifères*, les grandes spécialités de Boskoop, sont extrêmement réduites.

Pour ces plantes, les acheteurs d'Angleterre sont également peu empressés, ce qu'on attribue aux charges financières croissantes que la guerre impose au public de ce pays.

Les espérances fondées sur l'Amérique ne se sont pas réalisées et les dernières expéditions n'ont pas dépassé celles de l'année précédente, soit environ 8,000 caisses.

Tous ces facteurs ont eu pour résultat que des stocks énormes de plantes sont invendus. Les prix s'en ressentent fortement et le crédit des expéditeurs se trouve encore atteint par le faible cours du mark allemand qui subit actuellement une dépression de près de 20 pour cent.

Une conséquence désastreuse de l'existence de ces stocks est l'offre au rabais. Des expéditeurs présentent des marchandises à des prix absolument inférieurs. Bien qu'ils procèdent généralement par correspondance, et seulement avec leur clientèle ordinaire, leur attitude exerce une influence très déprimante sur le marché.

On se préoccupe des remèdes à apporter à la situation et il y a quelques jours un groupement local a décidé d'étudier un projet de vente aux enchères qui serait établie à Boskoop même, pour les fleurs coupées, les plantes en pot, les légumes, etc. On attend beaucoup de cette innovation et l'appui des administrations et associations locales a été demandé.

On ne semble cependant pas être convaincu en Hollande, que la guerre seule est responsable de la crise. Jusqu'à présent, la demande d'articles de Boskoop dépassait régulièrement la production. Mais chaque année les cultures s'étendaient et les offres augmentaient de milliers de plantes. On n'était pas sans anxiété pour l'avenir. D'aucuns prévoyaient déjà le moment où les débouchés seraient insuffisants pour la quantité croissante des plantes jetées sur le

marché. Pour eux les événements actuels n'auraient que précipité la crise.

Les dernières statistiques apportent des chiffres très satisfaisants pour les exportations de bulbes à fleurs de la Hollande Septentrionale. En août et septembre, 1915, elles se sont élevées à 20,316,600 kilos contre 17,468,900 en 1914 et 17,807,200 en 1913, soit une augmentation en faveur de 1915, de 2,500,000 kilos.

Ces chiffres donneraient cependant une fausse impression quant aux résultats de la campagne, car les prix auraient baissé de 40 pour cent. Somme toute, les producteurs de bulbes pourraient être classés parmi les catégories d'horticulteurs qui souffrent de la guerre.

NOUVELLES DIVERSES.

AU CHAMP D'HONNEUR. — L'Association amicale des anciens élèves de l'Institut National Agronomique de Paris annonce que 1,100 ingénieurs agronomes ont été mobilisés. De ce nombre 103 sont morts au champ d'honneur, 24 ont disparu et 27 sont prisonniers. De plus le tableau d'honneur renseigne 17 chevaliers de la Légion d'honneur, 1 décoré de la médaille militaire et 85 citations à l'ordre du jour.

EMPLOI DE LA TOURBE "BACTERISÉE." — Le public a été intéressé récemment par la nouvelle que le Professeur Bottomley était parvenu à trouver un procédé pour utiliser le pouvoir fixateur d'azote de certaines bactéries. En faisant des cultures de ces bactéries dans de la tourbe, il aurait notablement augmenté la teneur de celle-ci en azote assimilable. L'application au sol, à dose élevée il est vrai, de la tourbe ainsi traitée a donné des résultats incontestables, mais on est sceptique quant à la valeur pratique du procédé. Le Professeur Bottomley a attribué ultérieurement l'effet obtenu non pas à l'azote, mais à des substances non déterminées qui stimuleraient la végétation et qu'il appelle "auximones" ou "esprit du sol."

FRUITS ET LÉGUMES POUR LES MARINS. — L'Association qui s'est constituée en Grande Bretagne en vue de fournir des fruits et légumes frais à la flotte, expédie hebdomadairement une moyenne de 150,000 kilos de produits. Depuis le début de la guerre les expéditions s'élèvent à un total de 8,000 tonnes.

EXPORTATION DE LÉGUMES. — On se rappelle les discussions auxquelles a donné lieu en Hollande l'exportation considérable de légumes vers des pays belligérants, en particulier vers l'Allemagne. L'affaire fut soulevée à la Chambre où les représentants des producteurs et ceux des consommateurs se trouvèrent aux prises, ces derniers faisant valoir qu'à la suite des envois vers l'étranger, la population était exposée à une pénurie de légumes.

Une formule très simple paraît avoir été trouvée pour mettre les deux partis d'accord. On n'interdit pas l'exportation des légumes, la production maraîchère hollandaise dépendant du débouché étranger, mais on exige que pour chaque envoi, une quantité proportionnelle soit mise à la disposition de la consommation intérieure. Cette quantité varie d'après l'importance que le produit présente pour l'alimentation de la population du pays.

Ce système semble donner lieu à assez bien de complications administratives, mais une partie de la besogne a été confiée aux associations intéressées.

Des arrêtés récents autorisent l'exportation, dans ces conditions, de Choucroute, Haricots et

Endives conservés au sel, Chou cabus blanc danois et Chou cabus rouge de garde.

On fait remarquer que l'intensité avec laquelle la contrebande se fait, diminue l'efficacité de beaucoup de mesures. De nombreux militaires préposés à la surveillance de la frontière allemande se font de belles rentes en fermant les yeux lorsque les infractions sont commises. En ce qui concerne l'interdiction d'exporter certaines catégories de Pois, on signale que des quantités considérables en sont accumulées près de la frontière, peut-être à la disposition des contrebandiers, peut-être aussi en vue d'une exportation régulière en masse, après que des démarches faites auprès des autorités compétentes auraient abouti à l'ouverture des frontières pendant quelques jours seulement.

LE COMTE DE HEMPTINNE. — De source hollandaise, on annonce que l'Orchidophile M. Joseph de Hemptinne a été remis en liberté à la suite de démarches diplomatiques. Il aurait dû verser une caution s'élevant à un million de francs.

AUX HALLES DE PARIS. — Nous avons annoncé que la Préfecture de Police allait prendre un arrêté destiné à amener la suppression des revendeurs ou regrattiers qu'on rend responsables de la hausse des légumes à Paris.

Il est interdit à tous les cultivateurs et propriétaires de produits destinés à être vendus sur le carreau forain, à tous employés à leur service et à tous acheteurs, d'opérer des transactions ou de les préparer par l'examen des marchandises ou la discussion des prix, soit en cours de route, soit dans le périmètre des Halles avant le déchargement des marchandises, soit sur le marché, en dehors des heures fixées pour la vente.

Pourront seulement vendre sur le carreau soit le cultivateur offrant sa propre récolte, soit l'approvisionneur ayant acheté directement au producteur et au lieu même de production. L'un et l'autre devront justifier par un certificat visé par le maire de la localité de production, de l'origine des légumes mis en vente.

Cependant les cultivateurs peuvent être autorisés, après déclaration du service d'inspection des ventes en gros, à se faire remplacer pour la vente sur le carreau par un employé ou un membre de leur famille. Cette faculté n'est pas accordée aux approvisionneurs; ces derniers ont droit à des aides, mais uniquement pour charger ou décharger les marchandises.

KORT OVERZICHT VOOR DE VLAMINGEN.

Volgens berichten uit Holland is de toestand bij de Boskoopse boomkwekers veel minder gunstig dan in de andere vakken van den Tuinbouw.

Verleden jaar zou de afzet tot op een vierde gevallen zijn; nu zijn de verhandelingen levendiger, maar toch merkbaar lager dan gewenscht wordt.

De uitvoer geschiedt meestal met trekplanten waarvoor men in Duitschland na den winter nog geregeld vraag verwacht.

Bloembollen uit Noord-Holland werden in grootere hoeveelheden uitgevoerd, doch de prijzen worden 40 voor cent lager geschat.

Hollandsche groenten mogen doorgaans uitgevoerd worden als een zekere hoeveelheid voor inlandsch verbruik ingeleverd wordt.

Professor Bottomley heeft een nieuwe doenvijze uitgelegd om bij middel van bacteriën het opbrengstvermogen van den grond te vermeerderen. De toekomst moet leeren in hoever zijne ontdekking kan toegepast worden.

OF THE FORMS OF FRUIT TREES.

(Concluded from page 367.)

FORMS TRAINED IN THE FLAT FOR SPALIER AND COUNTERSPALIER.

THESE, with the simple cordon, are suitable either for "espalier"—i.e., training against wall or pallsade—and for "contre-espalier," or training on linear supports in the open. These "palmettes" and "candelabra" fall into four groups—the vertical, the horizontal, the combined vertical and horizontal, and the oblique.

Apparently "palmette" originally was introduced to signify the fan (*éventail*), a form which seems to be getting nearly as common abroad as the *dodo*; thence it has spread to others, including the combined horizontal and vertical, which are still sometimes called "candelabra."

All except the first group seem to be much under a cloud at present, and in several big plantations I have visited they have either been grubbed or converted to vertical types. It was only where a low piece of wall had insufficient height that one saw a horizontal palmette (the so-called "espalier" of our gardeners); otherwise the double U reigns supreme (see fig. 135), with a single U or a vertical cordon in an awkward corner. The reasons are that labour is too costly, wall space and counterspalier space are too valuable to be lying idle whilst Verrier, toasting-fork or other palmettes are being trained, or whilst various devices for filling the awkward corners, that are left by obliquely-trained trees, are in progress. There are too many walls bare of fruit trees in this island! Further, the 12 to 15 inches interval between main branches of double U's for Apples and Pears, and the greater intervals for the Plum tribe, give ample root run, which is too small with the cordon and unnecessarily great with horizontal palmettes. Moreover, labour and time, though perhaps cheaper than here, are too valuable to be spent on forms which need so much more attention than the forms that are now elect.

Perhaps of all forms the oblique are the most discredited—not symmetrical, wasteful of time and of space, and not practical for favouring or retarding growth by inclination. The horizontal palmette in counterspalier gives place to the dwarf distaff or the single horizontal cordon (alone or in superposed series), both of which give more access to the land. I may note that Verrier recommends the palmette *Legendre*, in which the side branches are slightly inclined upwards, as a form preferable to the horizontal palmette.

All forms, especially with Pears, which have a central continuation of main stem, necessarily delay the use of space above, as, unless the lower parts are kept well forward, they are liable to suffer denudation. In spaliers, where the wall is high and especially where the tree is oldish, it is difficult to avoid injury with the ladder in the case of horizontal palmettes, so that the U's and Verriers would seem preferable, unless the side branches are kept short, say, 2 to 3 feet.

The mode of provision of supports for spalier trees may deserve a few words. The primitive nail-and-tag has probably become well-nigh extinct, and been replaced by strained wires; these, being horizontal, serve to support the vertical canes or slips where needed. Strained wires are also probably most convenient and of longer service than other methods for the counterspalier. The most favoured mode for the spalier, in some large plantations I visited, was formed by long pitch-pine slips supported by L-shaped clips in the wall; in case of rotting a new slip could easily be inserted without damage to the wall; to these, vertical slips were attached

for guidance of the branches, all of which were carried in double U form. One chief reason for the use of wood was because of the destructive action of copper washes on galvanised wire. In one of Moët and Chandon's vineyards I saw terrible effect of the electrolysis that results. Otherwise wire is far more cleanly.

Another scheme whereby attachments to walls may be obtained is by the use of the large-mesh welded and galvanised netting that now can be obtained. The meshes of that which I have fixed are 6 by 12 inches, and the stiffness is such that it does not require straining; when rolled vertically on the wall a few eyes and staples keep it in place. It seems very suitable for "espaliered" Roses, Wistaria, and other ornamental wall coverings, as well as for the objectionable fan-trained spalier, of which unfortunately I have a few examples. The netting is placed close to the bricks, and if a buffer is wanted to guard against contact of wire and stem, a half-split bottle-cork may be made to serve. For tying material osier is much used in France; for small ties Strawberry runners make quite good non-cutting ties. I find that fairly well ripened runners cut a day or two beforehand tie very well.

CONCLUSION.

The standard, pyramid and distaff, upright and single horizontal cordons, the single and the double U are the forms that economy of main-

tenance and production have indicated. The irregular bush, inconvenient and costly to maintain, and the horizontal palmette, costly to produce and for long wasteful of space, disappear; the fan, too, seems doomed, except, perhaps, for Plums, Apricots and Peaches, but here it remains to be seen whether these will not succeed equally well as U forms in our climate as the Peach trees I have seen in Northern France, where the evils of gum and curl are not unknown.

little seems known of modern methods of training; in at least two there would seem to be profound ignorance as to what a pyramid should be like: somewhat in parallel to an utterance by a friend that a certain tree was a "bush that had overgrown and become a pyramid"! It is now some years since the horizontal palmette (and perhaps more since the fan) was introduced from the other side of the Channel, and it seems about time that an incursion of further developments should be made. If in calling attention to the forms which the last score of years has shown to be advantageous some further progress is instituted in this country, these few and incomplete remarks will have been well justified, and the doctrine of light, air and symmetry will attain to the position it must surely merit. *Herbert E. Durham, Sc.D., etc., President Herefordshire Association of Fruit Growers and Horticulturists, Hereford.*

VEGETABLES.

SAVOY CARTERCON.

This new winter green has proved to be a most desirable vegetable, and should become a general favourite. The heads are of medium size and perfectly cone-shaped, which is a great point



FIG. 135.—COUNTERSPALIER OF DOUBLE U TREES AT WAGNONVILLE.

tenance and production have indicated. The irregular bush, inconvenient and costly to maintain, and the horizontal palmette, costly to produce and for long wasteful of space, disappear; the fan, too, seems doomed, except, perhaps, for Plums, Apricots and Peaches, but here it remains to be seen whether these will not succeed equally well as U forms in our climate as the Peach trees I have seen in Northern France, where the evils of gum and curl are not unknown.

For spalier or counterspalier the double U reigns supreme, and seems likely to continue; reason and economy designed it, practice has established it. Economy, now preached on all sides, directs that so cheaply and easily produced a form should be installed rather than expensive and out-of-date palmettes. To those who can spare an occasional five minutes, and who are not in a hurry for immediate crops, I commend the installation of a few maidens to train; there is fascination to be found in the practice of the art.

Judging by some nurserymen's catalogues,

in its favour, as it is likely to resist severe weather much better than the majority of the flat-headed varieties. The quality is excellent. For small gardens it should prove to be most useful.

I planted Savoy Cartercone rather late in the season, and was surprised to find how quickly the plants matured into small, solid heads.

TOMATO GOLDEN SUNRISE.

I HAVE been very pleased with this magnificent novelty during the past and present seasons. It possesses good qualities and is an exact counterpart of that well-known variety Sunrise (perhaps the most popular Tomato for all purposes), except that the colour is a rich golden yellow. It is most prolific and appears to set its fruit during the autumn and winter as freely as during the summer. At the date of writing we have many plants growing in 8-inch pots, and the fruits are in all stages of development. For eating raw I consider it one of the most delicious Tomatoes grown. *E. Beckett, December 7.*

* R. H. Cazalet describes an interesting mode of forming walls in the *Yearbook of the Herefordshire Association of Fruit Growers and Horticulturists*, 1914.

KEW NOTES.

At this season, perhaps more than at any other, the beautiful, varied, and distinct colouring of the Cypress family can be appreciated. While the *Abies* and *Piceas* do not thrive particularly luxuriantly at Kew, the *Lawson*, *Hinoki*, and *Sawara* Cypresses are happy there. In the light soil at Kew liberal applications of liquid cow manure are found to be very beneficial to the trees in spring and early summer.

The specimens of *Cupressus Lawsoniana* are numerous, and very varied in habit and colouring. *C. Allumi*, *Triomphe de Boskoop*, *Silver Queen*, *argentea*, *intertexta*, and *Wisselii*, are distinct by reason of their glaucous foliage. Against these the vivid green of *C. erecta viridis*, the dark green, graceful cord-like branchlets of *C. filifera* and of *C. gracilis* with its elegant habit are most effective. The yellow or golden *Lawson Cypresses* are represented by *C. lutea*, *C. aurea*, and *C. Westermanni*.

Cupressus obtusa, the *Hinoki Cypress*, is an attractive tree of moderate height. *C. aurea* and *C. Crippsii* are golden-yellow varieties, the last-named being perhaps the most effective of all golden *Conifers*. Associated with these are several varieties of another Japanese species, *C. pisifera*, in which the colouring is very effective. *C. filifera* is very distinct, with cord-like, pendulous branchlets forming a wide-spreading tree. The most prominent kinds with yellow foliage are *C. aurea*, and *C. filifera aurea*; while *C. squarrosa sulphurea*, as the name suggests, is of an effective silvery-yellow colour.

Celastrus articulatus, a free-growing climber from N.E. Asia, has very effective yellow fruits. Rambling over rough poles and clinging to the branches of a Lime tree, the stems are freely clothed with fruits. A little later the capsules will burst, revealing the scarlet-coated seeds. In autumn the leaves turn to a rich golden yellow.

Pernettya mucronata is an Ericaceous evergreen shrub with richly-coloured fruits. These vary considerably in size, and in colour, from pure white to purple black, including pink, rose, lilac, and ruby-red. As this shrub does not reproduce true to colour from seeds, selected forms should be propagated by cuttings, layering, or division. The *Pernettyas* thrive best in a peaty soil, or, at any rate, one free from lime. *Acanthopanax* (*Eleutherococcus*) *leucorrhizum* is an Araliad with attractive jet-black fruits. It forms a deciduous bush with spherical umbels closely set with fruits, and is one of Mr. E. H. Wilson's introductions from China.

In the Himalayan House the tree of *Davidia involucreata*, which now exceeds 30 feet in height, is carrying about twenty fruits. *Buddleia madagascariensis* is flowering freely on the roof of the large Temperate House. A vigorously growing climber, suitable for clothing the pillars and rafters of lofty structures, the long terminal panicles of rich orange-coloured flowers are particularly effective at this season.

One of the brightest groups of colour in the Begonia House is furnished by *Peristrophe pycnostachya*. A moist, warm greenhouse suits this Indian shrub, which was first introduced in 1826. The rich carmine-purple flowers are freely produced on bushy plants 1½ to 2 feet high.

The conservatory (No. 4 greenhouse), is bright with *Chrysanthemums*, winter-flowering *Begonias*, *Leonotis Leonurus*, *Carnations*, and *Jacobinia chrysostephana*. Several plants of the wild type of *Primula sinensis*, reintroduced by Mr. E. H. Wilson, are very interesting. The pale lilac flowers are dainty and pleasing. Trained to one of the rafters *Abutilon insigne* is flowering freely. It is a most useful winter-blooming climber with purplish-crimson flowers and darker veins. *Ardisia crenulata* (crenulata) is fruiting very freely, the rich red fruits and dark green leaves forming a pleasing foil to the blossoms of neighbouring plants. A. O.

The Week's Work.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

LACHENALIA.—Plants of *Lachenalia* should be grown where they will receive plenty of light. It would be difficult to find anything better or more adapted for growing in baskets for greenhouse or conservatory decoration than these bulbs. Besides plenty of light, they require fresh air on all favourable occasions. If these details are observed they may be grown with very little trouble. The species most commonly cultivated are *L. tricolor*, *L. pendula* and *L. Nelsonii*. All are suitable as basket plants, and when the flowers develop the baskets will be completely hidden by the arching foliage.

RICHARDIA AFRICANA (ARUM).—These flowers are not generally required until the *Chrysanthemum* season is over. Plants of the earliest batch will soon be coming into bloom. As growth develops and the pots fill with roots liquid manure and other stimulants may be used liberally. A temperature of 50° to 55° is suitable for the plants at this stage. If it is desired to retard the growth of a portion of the stock for as long as possible fire-heat should only be used to counteract frost, but only a little warmth is necessary.

CYCLAMEN LATIFOLIUM.—The earliest batch of plants are at their best and should be grown in a light position in a house having a night temperature of 50° to 55°. Fumigate later plants at short intervals to destroy insect pests and feed the roots liberally when they have filled their pots. Continue to grow on seedlings raised from seed sown last autumn with great care. Observe the details that were given in the *Calendar* for September 4.

HERBACEOUS CALCEOLARIAS.—These plants should grow steadily; let them have plenty of fresh air to prevent the shoots becoming drawn. Stand the pots on a cool, moist bottom, and afford them sufficient heat to counteract severe frosts.

ALLAMANDA.—Both the plants growing in borders and those in pots should be pruned. Shorten the shoots to about two eyes from the old wood, and only water the roots occasionally until the plants commence to grow freely. Planted out specimens in stoves cannot always be retarded, but pot plants may be removed to a cooler house until required for starting.

GENERAL WORK.—Continue with the work of cleansing the glasshouse both inside and out and keep the glass clear of sooty deposits, as plenty of light is essential to the well-being of plants during dull days of winter. Wash the old and place fresh material on the stages; coat wall spaces with a mixture of hot lime and sulphur. Fill the propagating case with fresh material, and pay careful attention to watering the plants, heating and ventilating the houses. Allow the temperature to fall a few degrees in severe weather, rather than use an excess of fire-heat.

THE ORCHID HOUSES.

By T. W. BRISCOM, Gardener to W. R. LYSAGHT, Esq., Castleford, Chepstow, Gloucestershire.

THE COOL HOUSE.—In this division numbers of *Odontoglossum* spikes are showing. The plants should be examined in the morning, and again at night, for slugs and snails. The remainder of the *Odontoglossums* will be in various stages of growth, and every encouragement must be given to the plants to make strong pseudo-bulbs. All the light possible should be admitted, and the ventilators may be opened more or less, according to the weather. If due attention is paid to light, watering, and ventilation, and no great fluctuation of temperature is permitted, the pseudo-bulbs will fully mature and produce strong, stout spikes of fine flowers. For the time being spraying overhead should cease;

to hold thrips in check the house may be vaporised every fortnight or three weeks. *Laelia pumila*, with its varieties, will soon have passed the flowering stage, and directly root-action is evident, any necessary repotting or top-dressing may be carried out. These plants thrive best in rather shallow pans without side holes, and a wire handle should be attached to each one, by which it may be suspended from the rafters of the intermediate house. The usual compost may be used, with a few partly decayed Oak or Beech leaves added. A large quantity of soil is not needed, and each receptacle must be filled one-half of its depth with drainage material. The watering should be done carefully at all times, the greatest quantity being required when the new growth is rooting from the base. When the plants are at rest sufficient moisture should be given to prevent the small pseudo-bulbs from shrivelling.

CATTLEYA.—Among those pushing up their flower-spikes will be the various fine forms of *C. Trianae*, and the pretty *C. Percivaliana*. Directly the buds appear at the base of the sheath of the latter species, a few degrees extra warmth will be an advantage. A low temperature is often the cause of the buds decaying. *C. Lawrenceana* has now completed its season's growth, and may be kept rather dry until the spikes are seen in the sheath; but the pseudo-bulbs ought not to be permitted to shrivel for lack of moisture at the base. This remark applies to all *Cattleyas* and their hybrids which have finished growing for this season.

DENDROBIUM.—*Dendrobium Phalaenopsis*, *D. P. Statterianum*, and *D. bigibbum* will need, as they pass the flowering stage, but little water during the winter months. They should be placed in a light position, where the temperature does not fall below 60° F. *D. formosum giganteum* may be treated similarly, but this species does not require so much water when it is at rest as the others, and not quite such a high temperature. The pseudo-bulbs should not be allowed to shrivel, but in some instances it cannot be avoided, owing perhaps to over-flowering, or to the fact that the plants are not well rooted. These remarks apply more particularly to *D. formosum giganteum*.

THE HARDY FRUIT GARDEN.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHCHILD), Buckinghamshire.

PEARS.—A deep, rich, friable loam is the most suitable soil for the Pear tree, when upon its own stock; but on the Quince stock it requires a rather moister soil, though the subsoil should be porous and fairly dry. A gravelly bottom is good, provided there is a sufficient depth of good soil above it. A clayey, wet, spongy bottom is the worst of all, and should be improved by draining. The bottom of the border should be provided with a floor similar to that recommended for Peaches and Nectarines, to prevent the roots, which are apt to penetrate to a great depth, from getting into a bad or unsuitable subsoil. The border should be made good to a depth of about three feet; and composed of good loam from an old pasture, as formerly recommended for Peach trees. If the loam be not sufficiently rich in itself, a moderate quantity of half-inch bones, or well-decayed manure, such as has been used in Cucumber or Melon beds, may be added. Pears will frequently prosper in soils where Apples will not live; but in shallow borders with a cold bottom they are extremely liable to send down their roots to a great depth, and hence produce strong wood, which is seldom sufficiently matured to form fruiting buds. They may continue to grow in this unsatisfactory state for several years without producing fruit, if not checked in some way or other. Trees planted on a lighter soil are seldom subject to this defect, and will often produce good crops of fruit in from three to five years after planting. When planting, due precautions should be taken to keep the roots near the surface, spreading them out in a horizontal direction. Surface roots always increase the number of root fibres, which has a tendency to induce fruitfulness.

THE QUINCE.—The Pear-shaped variety is the most common sort in cultivation, but the Portugal is sometimes considered the best variety. One or two trees are quite enough for even a large garden; their general management is the same as that of standard Apple or Pear trees, with the exception that they require but little pruning. Quinces prefer a rich, moist soil. They come earlier into bearing in a dry one, but the life of the tree is shorter.

CHERRIES.—The Cherry delights in a dry, light, and rather sandy soil, but not gravelly, for in gravel the trees are generally short-lived. Any good garden soil suits the Cherry, provided there is sufficient depth. Certain varieties—for example May Duke, Old Bigarreau, Elton, and Knight's Early Black—thrive in almost any aspect. Cherry orchards should be formed on light, rich, sandy soil, for then the trees crop yearly. The Cherry gardens between Ostend and Bruges, in Flanders, are on soil of this nature. Soils that are not naturally rich may be improved by the addition of light loam. Standard trees in orchards should be planted from 30 to 36 feet apart, according to the growth of the variety; pyramid or bush trees, from 12 to 15 feet apart; fan-shaped trees on walls, 12 to 18 feet. As a rule the Cherry makes but little growth during the first year after planting, but subsequently growth is fairly rapid, and yearly pruning is necessary until the trees come into regular bearing. At this stage but little pruning is required beyond regulating the branches. Spur pruning should be adopted; that is, cutting back the current year's growths from the side spurs, to within two or three buds at the base, and not shortening the leaders at the ends of the branches—unless they are unduly long. Pruning should be done directly the leaves have fallen, as then there is less danger of the wounds gumming.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duffryn Gardens, near Cardiff, South Wales.

CONIFERS AND BAMBOOS.—Bamboos have made very good growth this year. This is particularly evident where mulchings of cow manure and soil were given in spring. The roots of Bamboos require to be moist at all times, and where the soil around them is hard and likely to throw off rain, it should be lightly loosened with a fork and mulched with the above-mentioned material. Specimen Conifers may be similarly treated.

BEDDING PLANTS.—Fuchsias, Heliotropes, Calceolarias and Lantanas rooted from cuttings inserted in August and September, intended to grow on as standards, should be potted and grown in a temperature of 50° to 55°. Zonal Pelargoniums must be watered sparingly, and all decayed stems and leaves constantly removed. Old plants lifted for stock purposes, and now established in their pots, must be kept near the roof-glass to promote a sturdy growth for producing cuttings. Other stock plants must be kept healthy and clean, and given all the light possible, and not too high a temperature. The less tender subjects growing in frames, such as Pentstemons, Marguerites, and Calceolarias, though capable of standing a certain amount of frost, must be protected when it is severe, and given an abundance of air in favourable weather. Keep the foliage dry, remove any decaying matter, and stir the surface soil occasionally.

IRIS STYLOSA.—Remove dead leaves and decaying matter from plants of this beautiful winter-flowering Iris, which is sometimes known as *I. unguicularis*. Slugs are fond of the young flower-buds, and must be kept away by sprinkling soot and lime around the plants. If the flowers are required as cut blooms remove the spikes before the petals open. The blooms of the white variety, *I. stylosa alba*, are very liable to become blemished by inclement weather, and if not cut, should be afforded protection, such as a handlight or square of glass securely fixed over them.

THE ROCK GARDEN.—Rock gardens situated near trees are often littered with fallen leaves, which in some instances may be helpful rather than injurious to the plants, but, as a rule, they

are best removed, being harbourers of slugs, and by keeping the plants warm and dark cause them to make drawn growth. Make firm in the soil any plants that are loosened by the action of frost, and replace soil that has been washed away by heavy rains. Labelling is an important work where large collections of plants are grown. Labels may be written indoors on wet days, from lists previously prepared. The All-proof label is perhaps one of the best, as it combines neatness with durability, and there is no danger of the name being obliterated.

GENERAL WORK.—Make efforts to tidy up the pleasure grounds before Christmas. Garden paths should be well rolled after frost, and irregularities in the surface made good. Sweep and roll lawns as often as circumstances permit, but do not use the roller when the turf is very wet. Impoverished lawns are greatly benefited by a good dressing of well-decayed manure and soil. If this dressing is objected to as being unsightly a sprinkling of bone meal is a good substitute. Remove decayed leaves from Nymphaeas and other aquatics, taking care not to disturb the labels, or to damage the crowns of the plants. During frosty weather wheel manure to vacant beds or borders, and dig them, leaving the turned up soil rough. In wet weather prepare stakes and labels, and get pots and compost ready for use later. Overhaul mowing machines, taking them apart and cleaning the various portions. Oil the running parts, and afterwards readjust the blades in readiness for another year. Examine the roots of Dahlias in store. Should fungous growth be present on the tubers brush it off, cut away badly affected parts, and sprinkle lime and flowers of sulphur on the cut surfaces. Varieties required for propagating at the end of January may be selected and placed separately in readiness.

FRUITS UNDER GLASS.

By JOHN HIGGATE, Gardener to the Marquis of
LINLITHGOW, Hopetoun, South Queensferry, N.B.

EARLY FIGS.—Figs in pots that were started last month should be sufficiently advanced in growth to allow the receptacles being plunged in a hot-bed of 65° to 70°. Endeavour to maintain the hot-bed at a uniform temperature, and this will be best accomplished by having ready a quantity of fresh leaves and stable litter to be added as occasion requires. As soon as the shoots have started freely into growth let the night temperature be raised to 55°, with a corresponding increase during the day. The trees may be syringed gently overhead on fine days, but on other occasions the necessary atmospheric moisture may be maintained by damping the borders and paths on frequent occasions. As the pots are usually well filled with roots, care must be taken that the latter do not suffer from lack of moisture. Tepid water should always be used for this purpose.

LATE GRAPES.—In most cases the berries of late Grapes are matured sufficiently, and the bunches may be cut and the stems placed in bottles of water. This will allow the vines to have a complete rest for some time before they start again. Cut the bunches with stems sufficiently long to permit of the latter being placed well down into the water. Before it is brought into the Grape room each bunch should be examined closely and all decayed and shanked berries removed. Grapes, like all other fruits, keep best in a thatched building, where the temperature does not fluctuate. Unfortunately, such buildings are not always available. If an ordinary room is used the temperature should be as near 50° as possible. The bunches should not be exposed to draught. As the vines are almost dormant they may be pruned, remembering always to cut to a good plump bud. If there is considerable bleeding of the sap it will be advisable to dress the cut surfaces with styptic. From now until the vines are started keep the ventilators open both night and day, unless there is a danger of severe frost cracking the hot-water pipes.

EARLY MUSCATS.—If ripe Muscat of Alexandria Grapes are required about the beginning of June close theinery with a view to start-

ing the vines, for this choice Grape requires a long time to grow and finish its berries properly. Muscats that are forced early in this way should be planted entirely in inside borders. If the soil is moist, water will not be required until the roots are active and the vines have made a certain amount of top growth. To encourage roots to grow near the surface dress the border lightly with fermenting materials that have been previously prepared for the purpose, and renew the dressing from time to time. The temperature should range from 50° to 55°, with a rise of 10° during the day with sun heat. These temperatures should be maintained until the buds break, when the amount of fire-heat should be gradually increased. As the young foliage of Muscat vines is very tender the greatest precautions must be taken in admitting fresh air; indeed, cold draughts may be the forerunner of infestations of red spider.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

CUCUMBERS.—If seeds were sown a month ago the young plants should be ready to be transferred into 4-inch pots. The work must be very carefully done in order to keep the tender roots quite free from injury. The soil must be light and rich, and should be placed in the house the night previous to use, so that it may become thoroughly warmed before it comes in contact with the roots. After the plants are carefully potted and tied, the pots should be plunged in a mild hotbed, within 18 inches of the roof-glass, which must be quite clean. The plants may be lightly syringed several times daily in order to promote clean, healthy growth. Cucumber plants which are producing a crop should be kept in a temperature of 70° during mild nights, but if the weather is cold it may be allowed to drop 3 or 4 degrees with advantage. Regulate the young growth, and remove all useless leaves so that the shoots may be tied in without becoming overcrowded. In order to promote root-action, apply frequent light top-dressings of fine, rich soil. Water the bed thoroughly as it becomes necessary, but avoid frequent insufficient waterings, which would produce a moist surface without wetting the roots. Another sowing of Cucumber seeds should be made at once in small clean pots, which should be placed on a gentle bottom heat, within 18 inches of the roof-glass. Cover the pots with sheets of glass as a protection from mice.

RHUBARB.—Roots should be placed in gentle heat, putting in fresh stools at intervals of ten days, so that a constant supply may be maintained. The roots will force more easily if exposed to the weather for a few days after being dug up. The present is a good time to trench and prepare ground for new plantations of Rhubarb, and as the plants are likely to remain on the same plot for several seasons, it should be trenched 2 feet deep, and two good layers of manure applied. The bed should then be left exposed to the weather until March, when the plants should be put out in rows 5 feet apart, leaving 4 feet between the plants in the row.

FRENCH BEANS IN POTS.—A good sowing of French Beans should be made now with a view to producing a supply about the middle of February. Seven-inch pots are the best for this sowing; they should be carefully crocked and three parts filled with rich soil. This may consist of three parts turfy loam and one part leaf-mould, with a good sprinkling of sifted lime-rubble to render the compost porous. Make the soil moderately firm, and place six or eight seeds in each pot. When the seedlings are a few inches high they may be carefully thinned, leaving four or five healthy plants in each pot. At this stage a top-dressing of fine, rich soil may be applied and pressed down with the fingers, leaving a space of 1 inch for watering. A few light twigs should then be placed in each pot to keep the plants in an upright position. French Beans must never be allowed to suffer from insufficient moisture at the roots, or in the atmosphere, as this is almost sure to lead to attack by red spider or thrips. The Belfast and Osborn's Forcing are good varieties for this purpose.

EDITORIAL NOTICE.

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

Editors and Publisher.—Our Correspondents would oblige delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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

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

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

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

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 38.6.

ACTUAL TEMPERATURE:—Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, Thursday, December 16 (10 a.m.): Bar. 29.5. Temp. 46°. Weather—Raining.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Rose Trees, Shrubs, Perennials, Lilies, etc., at Stevens's Rooms, King Street, Covent Garden, W.C.

MONDAY—

Dutch Bulbs at 11, Roses at 1.30, at 67 and 68, Oheapside, by Protheroe and Morris.

TUESDAY—

Roses, by Protheroe and Morris, at 1.

WEDNESDAY—

Dutch Bulbs, at 11, Hardy Plants, by Protheroe and Morris, at 1.30.

An account is given in Leaflet No. 287 (Board of Agriculture) of the mildews and other fungous diseases of Peas. Of the two mildews to which culinary Peas are subject, that which is known as Powdery Mildew is the more widespread. It is due to the attack of a fungus, *Erysiphe polygoni*, and the symptoms—yellowing of the haulm and white powdery appearance on the surface of the leaves—are known only too well in gardens.

The fungus which causes the disease is evidently so widespread that, given suitable conditions for its development, the disease invariably makes its appearance, at all events late in the season. The chief of these conditions is dryness at the root, and there are few gardeners who cultivate light land whose maincrop and late Peas have not been damaged by this disease.

The leaflet under review remarks that "spraying is practically ineffective unless begun sufficiently early," and adds that spraying (with liver of sulphur) should be done before the disease appears in June and July, especially if the weather is dry and hot. For our part we think that, so far as Peas in gardens are concerned,

spraying is out of the question. We are open, however, to correction on this point, and we think that the advice in the leaflet would carry greater weight if it were accompanied by some evidence that spraying had proved profitable in specified and described cases. Our own opinion is that the best preventive of mildew in maincrop Peas is to be found in the provision of a good rooting medium, supplemented by a mulch if the season proves dry.

In support of this view we may cite the not uncommon experience of gardeners, namely, a complete freedom of maincrop Peas from mildew with a severe or total loss of late Peas grown in the same garden. That this is so appears to us to prove two things. First, that the spores of the fungus are ubiquitous, and, second, that the decisive factor in determining disease is the water supply. If this be so, spraying is not a sound method of dealing with this trouble. What should be aimed at is prevention, and, as we have indicated, the method to follow in endeavouring to prevent the disease is the provision of a good rooting medium and the encouragement of deep-rooting plants.

Another subsidiary method of prevention lies in the thorough destruction by burning of all diseased haulms. For winter fruiting bodies are produced after the crop of summer spores, and these winter fruiting bodies contain resting spores which remain dormant during the winter, and bring about infection during the spring of the following year.

The mycologist is too apt to look upon spraying as a panacea for all the evils from which plants suffer, and doubtless spraying is good practice in the case of many diseases: but in the garden it is well-nigh impossible, and probably inadvisable to spray for such diseases as Pea mildew. In any case if the writer of the leaflet has actual evidence that the method is successful, and that the cost in material and labour is repaid by the results, we wish that he would give us that evidence.

Another Pea disease enumerated in the pamphlet is a non-powdery mildew due to the fungus *Peronospora viciae*, recognisable by the presence of a mould on the leaves, which is at first white, but soon changes to a pink-grey colour. In the case of this disease, as in that of Powdery Mildew, winter as well as summer spores are produced, and hence means should be taken to destroy the former by burning the haulm.

Pea Rust, due to *Uromyces fabae*, a less common or important Pea spot, due to yet another fungus, *Ascochyta pisi*, attacks both pods and leaves. Yellow spots appear, increase in size, become dry, and are surrounded by a dark border, within which are to be seen the minute black fruiting bodies of the fungus. It is stated that Bordeaux mixture if applied early enough will hold the disease in check; and the same spraying fluid is recommended (at half strength) for the mildew caused by *Peronospora viciae*. The black rot disease which attacks not only Sweet Peas, but also Antirrhinums and other garden plants, is now believed to be caused by a *Phytophthora* (*P. omni-*

vora), and inasmuch as infection proceeds from spores in the soil, soil sterilisation is recommended. For this purpose the leaflet advises the use of formalin (formaldehyde) at a strength of one pint of the commercial solution to twelve gallons of water: one gallon to be applied to each square foot of soil. After the application the soil should be covered for two or three days with sacking or other waste material to delay the evaporation of the formalin. Seed should not be sown until about ten days after the treatment. As to streak disease, that bane of the grower of Sweet Peas, the leaflet can give but scanty information. It suggests that "streak" may be a result of "unsuitable conditions of growth," and that it may occur in the absence of either bacterial or fungous pests. There is evidently ample room for further investigation of the cause of this most serious disease.

TRIALS AT WISLEY.—The trials in the R.H.S. Gardens at Wisley next year will include Clarkia, Godetia, annual Carnations, Indian Pinks, Mignonette, Larkspurs, annual Delphiniums, Sunflowers, late Potatoes, mid-season Peas, Tomatos, Celery, Celeriac and Savoy. Seeds of the flowers and vegetables (in the case of the Potatoes twenty tubers of each variety) should be sent to the Director, R.H.S. Gardens, Wisley, Ripley, Surrey (station for goods: Horsley, L. and S.W.R.), before January 31, 1916. The necessary entry forms should be obtained at once.

MR. J. R. BOVELL.—Mr. J. R. BOVELL has resigned the superintendence of the Barbados Department of Agriculture, and has accepted the position of Agricultural Superintendent of important sugar estates in British Guiana.

MR. GEORGE BEECH.—The many friends of GEORGE BEECH, gardener at the Grange, Bishop's Stortford, will learn with regret that he has sustained a sad bereavement in the death of his wife, which occurred on the 10th inst., following an operation in the Bishop's Stortford Hospital.

APPOINTMENT.—Mr. CYRIL WARREN, lately a member of the gardening staff of the Royal Botanic Gardens, has been appointed by the Secretary of State for the Colonies, on the recommendation of Kew, a curator in the Agricultural Department of the Southern Provinces of Nigeria.

BEQUEST TO A GARDENER.—Miss HENRIETTA PHILPOT, of Lynton Croft, Croydon, who has lately died, left her gardener £1,500. The will also contained a provision that if the testatrix's mother died before her the gardener should receive £4,000, the contents of the garden, and certain furniture. She also left £300 to the undergardener.

BALLOCH PARK, LOCH LOMOND.—The Glasgow Corporation has entered into possession of the Balloch Estate, Loch Lomond, and it has now been taken over by the Parks Committee, which is considering how it can be best utilised in as economical a manner as possible.

DECORATIVE CHRYSANTHEMUMS IN GLASGOW PARKS.—Although considerable numbers of large-flowered Chrysanthemums are still cultivated in the Glasgow parks, the use of the smaller decorative varieties is being extended as in most other places, and there has been a fine display of these flowers in all the winter gardens, including Camphill, Tollcross and Springburn. Many of the most useful single varieties are utilised.

FLOWERS IN SEASON.—A fine inflorescence of *Vanda coerulea*, bearing twelve beautiful blooms and a smaller spike of the paler *Wrigleyi* variety, are sent us by Mr. E. ROGERS, gardener to O. O. WRIGLEY, Esq., Bridge Hall, Bury, Lancashire, with the following note:—"I read in *Gardeners' Chronicle* some time ago an article on *Vanda coerulea*, in which was pointed out the difficulty of growing the plant successfully in the neighbourhood of large towns. I am sending you two spikes cut from plants we exhibited at the Manchester and North of England Orchid Society's Show on the 2nd inst. The plants have been in the collection here for some years past. We had an unusual amount of fog during November this year, and also more frost than we have had for many years past. The spikes will prove to you that *Vanda coerulea* is not quite so difficult to manage in smoky districts as some people imagine."

— Mr. G. Low sends us from Lees Court Gardens, Faversham, spikes of the beautiful *Iris tingitana*, the colour being light blue with standards of deeper shade, the falls having a large orange-yellow blotch. Although many find this *Iris* a shy bloomer, Mr. Low appears to be very successful with it, for he writes:—"By growing it in batches, it can be flowered from November all through the winter, and nothing could be better for Christmas decorations, either as cut blooms or pot plants. The stems of those I send you have been shortened, but the usual height is 24 inches. The plant requires very little forcing to come into flower by November."

WINTER TOP-DRESSING OF WHEAT.—Farmers are urged in Leaflet No. 46, issued by the Board of Agriculture, to top-dress their autumn Wheat with 1 cwt. per acre of sulphate of ammonia in December. It is pointed out that such a dressing is calculated to help the plant to keep growing during the critical period from Christmas to February. The leaflet points out, that although some of the sulphate of ammonia may be washed out of the soil by rain, yet as it passes down it will encourage deeper root-growth. Late autumn or winter (up to the beginning of January) is said to be better than early autumn for applying such a top-dressing, because the washing-out effect due to heavy autumnal rain is avoided. The Board has made arrangements whereby manufacturers are reserving a supply of sulphate of ammonia for this purpose. This supply will be sold during December, at prices not exceeding £14 10s. per ton f.o.r. at the maker's works in bags, in lots of 10 cwt. and upwards.

WAR ITEMS.—Miss SWAN, of Overhill, Warrington, realised £20 19s. 3d. by the sale of Lavender at the Royal Horticultural Society's Meeting on December 7, and the Carnation Show on December 8, in aid of the R.H.S. War Horticultural Relief Fund.

— More than a year ago we referred to the fact that M. HENRI NONIN, son of M. AUG. NONIN, had been wounded (see *Gardeners' Chronicle*, October 3, 1914, p. 238). Subsequently he was ill with typhoid fever. Having rejoined his regiment after five months' absence, Sergeant NONIN was promoted to the rank of Second Lieutenant in the 164th Regiment of Infantry. We learn now that he has again been wounded. This time his right arm has been shattered above the elbow, and although his arm may be saved, it is expected that eighteen months at least will elapse before he can expect to regain the use of it. He is at present in hospital at Lyons, where, we understand, he was decorated with the Legion of Honour and the War Cross on the 3rd inst.

ALMONDS ON PEACHES.—In the *Comptes Rendus* for the present year is an account by G. RIVIERE and G. BAILHACHE, of the occurrence of typical Almond flowers on an old espalier

Peach tree. According to the report the Almond flowers were borne on branches some considerable distance away from the junction of scion and stock. The Peach in question is grafted on the Almond. Attention was first directed to the phenomenon in 1908, when it was observed that the Almond flowers appeared some eight or ten days before the Peach flowers. In the present year, for the first time, the fruits from the Almond flowers have matured, and are typically Almond-like in appearance. The seeds contained in the fruits have been sown with the object of determining whether they will throw any light on the phenomenon. The minute

cases. The 1915 season promises to exceed the 1914 season. Most of the work of new planting has been carried out by large companies acting on behalf of intending orchardists who are not yet resident. The methods adopted by these companies are similar in each case. A supervisor who is a fruit expert is appointed for each estate, and a staff of men is engaged. The whole of the planting work, including clearing, ploughing, purchase of trees and fencing, is carried out under this supervision; and by this staff the orchards so planted are maintained, under the same management, until in bearing. This method is agreeable to many

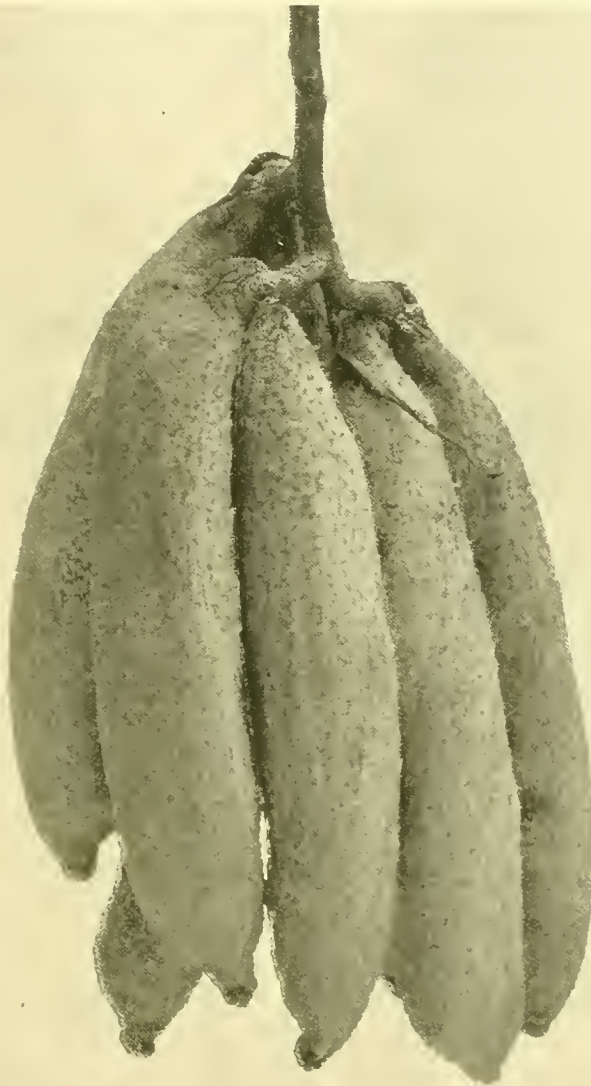


FIG. 136.—FRUITS OF *DECAISNEA FARGESII*.
(See p. 383.)

[Photograph by E. J. Wallis.]

anatomy of the branches bearing the Almonds should prove interesting, for it can scarcely be doubted that these branches would show at least in some of their layers the anatomical characters of the Almond.

THE EXPORT FRUIT INDUSTRY OF NEW ZEALAND.—During the planting season 1914 some quarter of a million fruit trees—mostly Apples of approved commercial export varieties—were planted in New Zealand. The Nelson district has always led the way in orchard planting, and Apples exported from Nelson Province in 1912 totalled 18,000 cases; 1913, 33,000 cases; 1914, 66,000

purchasers, as it enables men who could not otherwise afford the five or six years' wait to remain in whatever position they may hold until their orchard is a revenue-producing concern. The varieties of Apples favoured in the Nelson district are Cox's Orange Pippin, Jonathan, Sturmer Pippin, Munroe's Favourite, Delicious, Scarlet Nonpareil, Washington and Alfriston. Shipping facilities from the Nelson district are provided by three ports, capable of taking and loading coastal boats to carry the fruit to Wellington for sale or for transhipment for export. Extensive planting is also proceeding in North Auckland. It looks, with the enormous area of

land available, as if the Apple output from this district will in years to come exceed that from Nelson. The varieties planted are somewhat different, the most successful being Doherty, Northern Spy, Gravenstein, American Horn and Lord Wolseley. At present South America is the greatest consumer of New Zealand Apples. The buyers from this continent are demanding more fruit than New Zealand can supply. This may not, however, always be the case, as in four years' time it is anticipated that the

and cool-storing of the fruit of the surrounding growers. *Journal of the Royal Society of Arts.*

"BOTANICAL MAGAZINE."—The following plants are illustrated and described in the issue for December:—

FATSIA JAPONICA, tab. 8638.—This is an old garden plant, and a favourite in towns, being better known to the majority of gardeners as *Aralia japonica*; in the London district it goes by the name of Castor Oil Plant, doubtless because of its resemblance to *Ricinus communis*.

scarlet fruits of this Japanese Spindle-tree bear a strong superficial resemblance to those of our native *Euonymus latifolius*, but they differ in that they are unlobed. The plant makes a small tree, and is perfectly hardy, so that it offers a good ornamental subject for the back of the shrubbery border. The scarlet pendulous fruits are very freely produced, and the seeds offer a ready means of propagation.

IRIS BRACTEATA, tab. 8640 (see fig. 137).—This beautiful Iris, which has yellow flowers veined with brownish-purple, grows wild in the Oregon district, U.S.A., where it was discovered in 1884. Although the plant is of somewhat scanty growth, it thrives in this country under the cultural treatment suitable for most species of Iris, but it is interesting that the blooms open a fortnight later than in the native habitat. Mr. DYKES recommends the plant as suitable for rock gardens.

PRUNUS MAXIMOWICZII, tab. 8641. — This species of *Prunus* belongs to the Mahaleb section of Cherries, and forms a tree about 20 to 30 feet high. The fruits resemble small Cherries, and are borne on short branches, each fruit being subtended by a foliaceous bract, which is a distinguishing character. The plant is a native of Eastern Manchuria, where it was discovered in 1857 by RUPRECHT. At Kew the tree is hardy, but the foliage has not developed the autumn tinting characteristic of specimens in Japan and North America.

EXPERIMENTS WITH INSECTICIDES.—Tests with various insecticides carried out by Messrs. E. W. SCOTT and E. H. SIEGLER form the subject of Bulletin No. 278 of the U.S.A. Department of Agriculture. The chief conclusions reached by these investigators are:—Arsenate of lead is the most consistent and valuable "stomach poison." It is equally effective as a paste or powder. Triplumbic arsenate of lead poisons less rapidly than diplumbic arsenate, but is safer for tender foliage; both work well in checking codlin moth injury. Arsenate of lead may be combined with nicotine solutions and lime sulphur solution for the control of various Apple-chewing and sucking insects and fungous diseases. A 10 per cent. kerosene emulsion was effective (in the laboratory) against *Aphis pomi*. A promising new insecticide was discovered in arsenate of calcium. It should cost less than lead arsenate, and may be prepared at home by mixing fused (dry powdered) sodium arsenate with lime: Stone lime (90 per cent. CaO), 55lb.; sodium arsenate (dry powdered) 65 per cent. As₂O₃, 100lb.; water, 26 gallons. The lime is placed in a wooden vessel, and a little water added to start slaking. When slaking is well under way pour in the sodium arsenate, having first dissolved it in hot water; stir till the lime is thoroughly slaked, adding enough water from time to time to prevent burning. After the calcium arsenate has settled, the liquid, which consists mainly of sodium hydroxide, may be poured off.

PUBLICATIONS RECEIVED.—Bulletins of the Columbia University Biochemical Association:—*On the Origin of the Humin Formed by the Acid Hydrolysis of Proteins; A Milky White Amphibian Egg Jell; Accessory Appendages and Other Abnormalities Produced in Amphibian Larvae through the Action of Centrifugal Force; On the Influence of the Order of Development of the Fruits of Passiflora gracilis upon the Frequency of Teratological Variations; Studies on the Physico-Chemical Properties of Vegetable Saps; Reaction of Rabbits to Intravenous Injections of Mould Spores; Notes on the Solubility of Urea in Ether, and of Uric Acid in Alcohol and in Ether; Notes on the Toxicity of Dilute Solutions of Certain Phenolic Compounds as Indicated by Their Effect on Amphibian Eggs and Embryos, together with References on Modifications of Pigment Development.* By Ross Aiken Gortner and other authorities. (Washington: Station for Experimental Evolution, Carnegie Institute.)



FIG. 137.—*IRIS BRACTEATA*: FLOWERS YELLOW, WITH BROWNISH-PURPLE VEINING.

Dominion will be able to export from a million and a half to two million cases of Apples per annum. Therefore growers must organise in order to develop further markets. According to the report for 1914 of the Wellington Chamber of Commerce, there should not be any very great difficulty in organising these markets, but the day of the individual grower marketing his own fruit is rapidly passing away. Co-operative societies or companies will probably be formed whose functions will include picking, grading,

As the specific name implies, the plant is a native of Japan. The foliage is strikingly handsome, and the large panicles of greenish-white flowers produce a pleasing effect in the garden during October and November, when few other plants are in blossom. This shrubby plant thrives remarkably well in the gardens at Kew, where it is associated with Bamboos, and we have noticed many excellent specimens in the front gardens of villas in the London suburbs.

EUONYMUS OXYPHYLLUS, tab. 8639.—The

FRUIT REGISTER.

GRAPE PRINCE OF WALES.

WHEN in good condition the flavour of this Grape in November is equal to that of Madresfield Court, and superior to Mrs. Pince. It is seldom that Madresfield Court is in good condition after October, whilst the bulk of other varieties ripening then are generally inferior in flavour. It is many years since Messrs. J. Veitch & Sons sent out Prince of Wales, which is a sport from Mrs. Pince; but it has not advanced in public favour so much as its merits deserve, owing to a want of knowledge of its requirements. At the autumn fruit show of the R.H.S. there was but one bunch of the variety that could be termed superior; but the single example proved that the Grape is a valuable one, and only requires the right treatment to be in excellent condition. Bunches are not freely produced by the ordinary method of spur pruning; a more extended method of rods and spurs is necessary. The variety is not generally a free "setter," and requires to be artificially pollinated with either its own pollen or pollen from some other variety. Good colour in the berries is not a certainty, as in the case of its parent, but a controlled rooting medium—that is to say, an inside border—would remedy this defect. *M.*

TREES AND SHRUBS.

DECAISNEA FARGESII.

THIS interesting and ornamental shrub is a native of Western China, whence it was introduced to European gardens about twenty years ago. The genus had previously been represented in the British Isles by *D. insignis*, the only other species, a Himalayan shrub which was discovered in 1838 in Sikkim, and flowered in the Temperate House at Kew in 1884. This plant was figured in *Bot. Mag.*, tab. 6,731. *D. insignis*, however, never became well known, as it was apparently too tender to withstand our winters.

The species under notice grows well out of doors in the South of England, and is probably hardy in the Midlands, for it only suffers occasionally by late spring frosts injuring the young leaves when they are partly developed, moderately severe winter frost causing no harm. The species forms a bush 6 to 10 feet high with numerous straight, stout branches rising from near the base. There are few secondary branches, and in winter the plant has a somewhat gaunt appearance; they are, however, conspicuous by reason of the large woolly buds. During summer the stems are almost hidden by the large, pinnate leaves, which are between 2 and 3 feet long, and composed of from 15 to 25 leaflets, the largest of which are about 6 inches long. The flowers are borne from the points of the young shoots in June, or early July, and they are in loose, drooping panicles up to 18 inches long and 12 inches wide. The flowers are unisexual, but both male and female blossoms are borne on the same inflorescence. They are greenish yellow in colour, and curious by reason of their long narrow petals, but not very attractive. The fruits are peculiar and interesting, for they are sausage-like in outline with a blue or violet-blue outer covering, the inside being mucilaginous, and containing numerous black seeds. Fig. 136 illustrates a bunch of fruits. Three fruits may be produced by each flower; the bunch in question, which developed in the Royal Gardens, Kew, during the summer of 1915, is made up of nine fruits. As a rule a few scattered pods only are produced by each inflorescence. The principal difference between the two species lies in the fruits, those of *D. insignis* being rather longer than those of *D. Fargesii*, and golden-yellow in colour. In

the plant under notice the pods are about 5 inches long and $\frac{3}{4}$ inch in diameter. *Decaisnea* is included in *Berberidaceae*, and the specific name *Fargesii* is in compliment to Father Farges, a French missionary in China, who sent seeds of the tree to France in 1895.

The shrub grows best in situations sheltered from north and east winds, where the soil is light, loamy and well drained. Seeds produced in this country germinate readily, and should be sown in light soil in a warm greenhouse. *W. D.*

THE ROCK GARDEN.

IBERIS PINNATA.

THIS Candytuft, though not very well known, is nevertheless worthy of the consideration of growers of rock plants. It is of more trailing habit than that of other perennial Candytufts of its size, such as *Iberis sempervirens*, and therefore makes an excellent plant for trailing over large rockwork, which it covers with a veil of ever-

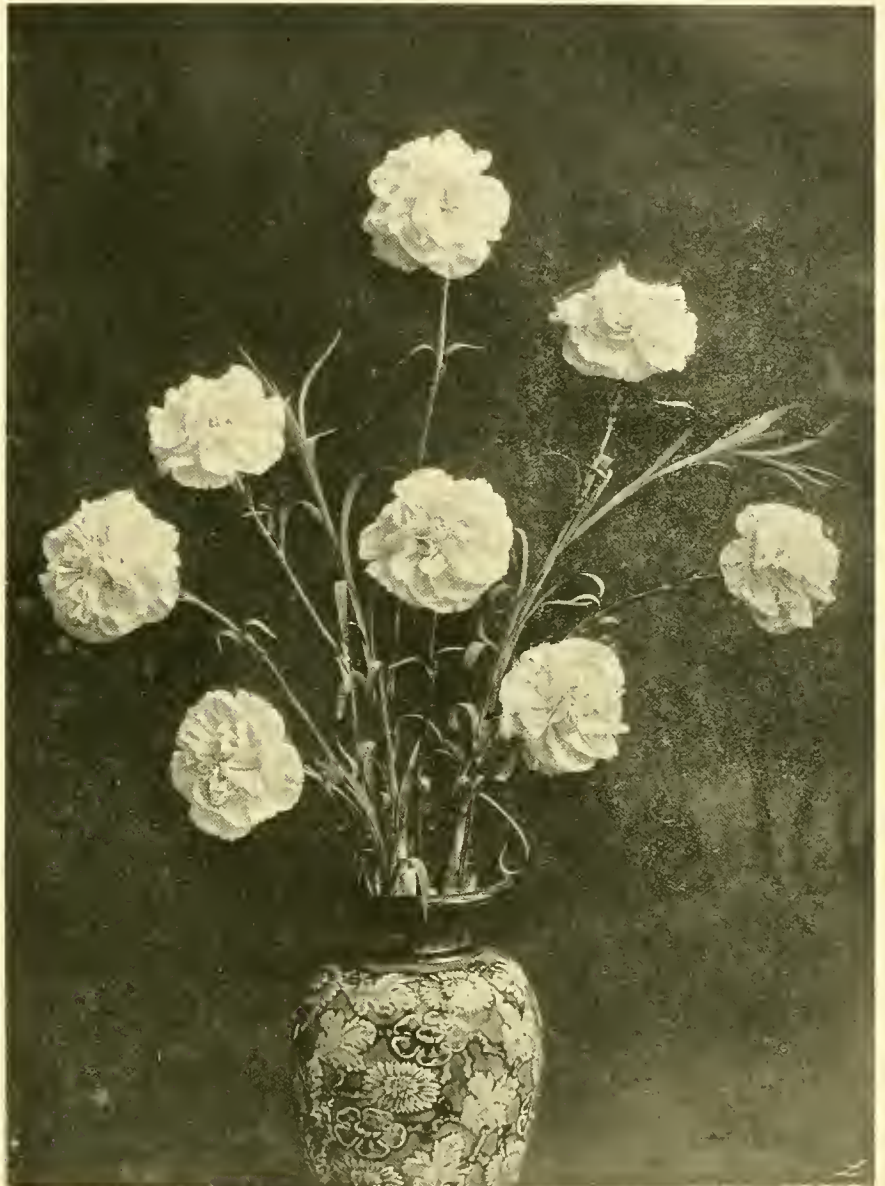


FIG. 138.—CARNATION MRS. MACKAY EDGAR: FLOWERS LIGHT PINK.

(Award of Merit, Perpetual-flowering Carnation Society, December 8, 1915. See p. 371 ante.)

VIBURNUM PLICATUM AS A WALL PLANT.

SELDOM do we see this deciduous shrub trained on walls; yet there does not appear to be any reason why it should not be more commonly employed for this purpose, as its growth is adapted to this form of training. I recently saw at Eaton Hall, Chester, a greenhouse wall 5 feet high with a northern aspect, covered thickly with this plant. The bronze tinted foliage as I saw it in September gave a fine effect. The gardener, Mr. Barnes, speaks highly of the plant when covered with the pure white blossoms. *Visitor.*

green foliage. The main value of the plant to me lies in the fact that it has always given two crops of flowers annually since I acquired it some years ago. In spring it is practically covered with heads of white flowers. In late autumn it gives a second crop, but these flowers are more sparsely borne; still, they come at a time when other flowers are scarce in the rock garden. *Iberis pinnata* has proved perfectly hardy in my garden, where it is cultivated on the north-west side of the rockery garden and trails over the rockwork. The species is a native of South Europe. *S. Arnott, Sunnymead, Marwelltown, Dumfries.*

NOTICES OF BOOKS.

THE PRINCIPLES OF FLORICULTURE.*

The author informs us that it is only within the past ten years that the teaching of floriculture as a separate subject has been attempted in an American University, this volume being the pioneer textbook on the subject. The contents are remarkably comprehensive and include everything one can think of in connection with flower-growing, the point of view being naturally transatlantic, and approached almost solely from the commercial standpoint. Private growers, consequently, must extract what instruction they may from its pages. To the British cultivator the most valuable remarks are those relating to the construction, material, and heating of glass structures of enormous dimensions, and more especially those constructed to produce Roses, Violets, Sweet Peas and Carnations out of season and in immense quantities. Heat without fluctuation and light so abundant as to preclude the necessity of elevating plants above the ground level, are attained in all modern American glass structures. Iron, glass and concrete are the constructive materials most in request, and heating is either by steam or by a modified system of hot water, accelerators being employed to force the water by pumping or other means. A series of chapters details methods of cultivating the chief market plants, but in these we find nothing better than or so good as our own system, and in some instances where names are given of varieties, those out-of-date in this country are listed. In the case of Cyclamen, it is remarked that small-flowered forms are to be preferred to giant strains, because the former provide a larger number of flowers! The history and the methods of destroying insect and fungous pests are detailed with much clearness, and here we might all accept a lesson in cyaniding after the American fashion, which is to use a small quantity of material and to give it a lengthened exposure, which insures the destruction of insect life without any danger whatever to the health or life of the plants that they infest. It is a little remarkable that the writer should recommend for seedlings cultural treatment which is certain to induce, or where present to increase the growth of algae among them. To water the plants is sure to defeat any means taken to combat the complaint, and nothing destroys it more certainly than a surface coat of sand that has been several hours subjected to fire-heat. Stem rot in Carnations appears to be very prevalent in America, but this I have never seen where cultural treatment is correct. The volume is profusely illustrated, and may be studied with the expectation of benefit by those interested in the fascinating pursuit of which it treats. B.

AMERICAN NOTES.

VARIETIES OF NEPHROLEPIS.

At the Brooklyn Botanic Garden there has been assembled a collection of between sixty and seventy varieties of *Nephrolepis*, over fifty of which are named, as shown in the list given below. The catalogue of English growers offers about forty additional varieties, which the Garden expects to purchase within a few months.

In addition to maintaining this collection for the purpose of scientific study, the Garden desires to make it of value to American growers of *Nephrolepis*, and makes, herewith, the following offer. Small plants or runners of any of the

plants named will be furnished to growers interested in trying them, as fast as a limited supply of stock plants will allow. Requests for information regarding any of the varieties listed below will be answered by the writer of this note as completely as available data will permit. Furthermore, the Garden is having reprinted the writer's article on *Nephrolepis* prepared for Bailey's *Cyclopaedia of American Horticulture*, and will be glad to send a copy of this reprint to any grower on request. This contains a general discussion of *Nephrolepis*, with descriptions of all the varieties about which information was obtainable.

In return, growers are asked to send in any new forms which they may produce, and also any old forms, such, for example, as Barrowsi, which has not yet been obtainable in the United States although listed in English catalogues. In connection with the *Cyclopaedia* article, the writer will welcome and greatly appreciate notification of any mistakes or omissions, or other information pertinent to the subject.

List 1.—Varieties of *N. exaltata* of authenticated identification (two or three exceptions noted), the stock plants having been obtained from their original source:—

N. exaltata (from Porto Rico), *bostoniensis* (Becker), *Piersoni* (?), *elegantissima*, *elegantissima* "improved," *elegantissima compacta*, *superbissima*, *muscosa*, *viridissima*, "dwarf Boston"; *Whitmanii*, *Whitmanii compacta*, *magnifica*, *gracillima* (?), *Amerpohlii*; *Clarkii*, *Smithii*, *Craigii robusta*, *Wanamakeri*; *Scottii*, *Wagneri*, *falcata*; *Anna Foster* (?); *Elmfordii*; *Harrisii*, *Millsii*; *Rooseveltii*, *Teddy Jr.*; *Scholzeli* (typical 2-pinnate), *Scholzeli* (3-pinnate, erect lvd.), *Scholzeli* (3-pinnate, spreading); *Giatrasii*, *New York*; *todeoides* (?).

List 2.—Varieties of species other than *N. exaltata*; identification not yet verified:—

N. cordifolia, *tuberosa plumosa*, *pectinata*, *Duffii*, *rivularis*, new species (?), *biserrata* (*davallioides*?), *biserrata furcans*, *hirsutula*, *hirsutula triplinatifida*, *Wittboldii*, *floccigera*, *acuminata*, *philippinensis*, *superba* (or *Westoni*).

Besides these, other forms to the number of ten or fifteen are being grown at the Garden. Some of them are possibly of no commercial value, but others are of value and are likely to be introduced eventually. The latter have been sent to the Garden with the understanding that they will not be distributed. R. C. Benedict, Brooklyn Botanic Garden, U.S.A.

ON OUTDOOR VINES.

THE bag method of cultivating Grapes on outdoor vines has apparently many strong supporters in France, and is, perhaps, so insufficiently known with us that a few words on the subject may be of use. Last year I made a preliminary trial on a vine which had just come into bearing after transplantation by a S.W. wall, and so good a bunch was obtained that I made further trials this year on two vines. Samples of the products of one have been submitted to the editors. The method consists in sheltering the bunches with waterproofed paper bags, care being taken that the junction with the bearing branch stem is well wrapped, and that the paper is closely bound (e.g., with a small strip of lead), so as to prevent the loss of warm air upwards.

As soon as the blossom buds appeared, bags (those used for Pears, 14 x 22cm.) were put on, a slight slit having been made an inch or so down one side, to accommodate the junction with branch. The bottom of the bag was also slit so as to form a "cloche à Raisins"; this, I think, is unnecessary, as the existing perforations would probably give enough air. When the buds came into blossom, the thinning scissors

were used, and a considerable quantity of the blossom was removed; the same bags were then replaced. When the berries formed, thinning was again practised; in theory, removing three out of every five, and larger sized bags were put on. Three groups of bunches were distinguished:—(1) Those entirely unbagged; (2) those in bags with bottom slit; (3) those in unslit perforated bags. Each of these groups were further subdivided by one shoot being left intact, whilst another was submitted to the annular incision (with "inciseur Pradines" 4mm.). I may say at once that no very marked difference in favour of the incision appeared; on one vine some splitting of berries has occurred, perhaps because the incision was made too early to protect the berries from the fate that the unringed bunches have also experienced.

The entirely unbagged bunches did not blossom until the bagged ones showed full-sized fruit, so that they were considerably hand-capped. Consequently it is not surprising that they were tart, whilst the bagged ones attained a full and luscious sweetness in the case of Chasselas rose royale. (Why call them Muscadines, and not retain the name the raisers gave them?) The Chasselas is under a window, and only allowed 4 feet height. It had six bunches this (third) year from planting, and is rather more sheltered than the larger vine, which is twice the height, but the bunches ripened early in bags last year. The shoots were stopped at two leaves, as usual, and the "Vine border" consists of a gravel path.

Another use for paper bags may be mentioned as possibly worth attention, though my own trials do not go beyond giving promise on Grapes under glass. It is to expose the bunches to confined antiseptic vapour in order to prevent or stop the inroads of mildew. For this purpose a wad of cottonwool soaked in strong formaldehyde is dropped into the bag before it is fixed in position. The bunches so far treated had already been attacked, but the mildew has been retarded, if not checked entirely; it was intended to fumigate the bunches thus as soon as they were beginning to ripen, but the work was deferred until mildew appeared. H. E. Durham.

ACACIA.

THE growing of Acacias for conservatory and house decoration is not practised nowadays so frequently as it used to be years ago; but there is much to recommend the use of these handsome plants, especially during the winter and early spring, when it is often difficult to provide variety in suitable decorative plants. In some quarters there exists a totally mistaken idea that Acacias are difficult to cultivate or that they require a lofty house. In such a large genus, numbering altogether some 500 or more stove and greenhouse species, there is no difficulty in finding plants that can be grown and flowered in small pots, and others that can be utilised for clothing pillars or roofs in large, lofty conservatories.

The cultivation of greenhouse Acacias is simple and easy if it is always borne in mind that they are natives of Australia and New Zealand, and do not require anything approaching stove-treatment: in fact, the cooler they are kept without being exposed to frost the better. When grown in pots they should be plunged in ashes out-of-doors in May as soon as all danger of frost is past, and should be supplied with plenty of water while they are growing. Occasional waterings with weak liquid manure made from cow dung and soot are beneficial. The plants should be housed in October and afforded plenty of air on all favourable occasions. The work of pruning should be done as soon as the plants have flowered, and the

* *The Principles of Floriculture*. By Edward A. White, Professor of Floriculture, Cornell University, New York. (The Macmillan Company.) Price 7s. 6d.

new growth encouraged to develop as much as possible, the next season's flowers depending on the vigour and health of the young, ripened wood.

Acacias are not exacting as to soil, provided it is well-drained and porous; a mixture of equal parts of turfy-loam, peat and leaf-mould, with plenty of sharp sand added, forms a suitable compost.

The following list comprises only a few of the best species for general purposes, the larger-growing species being useful to furnish cut bloom if space can be provided for them.

ACACIA ALATA.—This plant bears sulphur-yellow flowers from December to February and blooms freely. It is a somewhat irregular grower, but the winged stems have a quaint effect when covered with flowers.

A. ARMATA.—This is a bushy-growing species from Australia, attaining a height of about 8 feet with maturity. The yellow flowers open in March and April, and are freely produced on small plants. The leaves are entire, ovate to oblong in shape, and of a bright green colour.

A. DEALBATA.—This species is known as the Silver Wattle and Mimosa. It is a large-growing Australian species, reaching a height of 30 feet. The flowers are of a bright yellow colour, and are disposed in racemes on the axillary branches. The leaves are pinnate, feathery in appearance, and have a pleasing grey-green tint.

A. PLATYPTERA.—This species is a native of the Swan River region in Australia, and forms a bush from 3 feet to 6 feet in height. The sulphur-yellow flowers open in December and January, and are borne on short stems. The branches are winged and the leaves short and stem-like.

A. RETINODES.—This plant attains to a height of about 10 feet and bears pale-yellow flowers in short spikes. The linear leaves are 3 inches or more in length and are of a grass-green shade.

A. RICEANA.—This species grows to a height of 20 feet with age, and has a graceful, drooping habit resembling that of a Weeping Willow. The leaves are linear and are produced in dark-green clusters. The pale-yellow flowers are produced in comparatively long, axillary spikes. This is a very useful plant where cut flowers are required in quantity, as long sprays can be cut without injuring the specimen.

A. UROPHYLLA.—A white-flowered species which blooms freely at any size, but it is a somewhat straggling grower, and requires careful pruning to keep the plant in good shape.

The above are only a very few of the many that are worthy of cultivation; but an inspection of the various species grown in the temperate house at Kew would amply repay the time of anyone interested in these handsome and somewhat neglected plants. *J. Clark.*

HOME CORRESPONDENCE.

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

THE WEATHER IN NOVEMBER.—It is seldom that we have so many fine days in November, or have been enabled to work the ground with such ease as was the case last month. The rainfall (3.09 inches) is considerably below my average for the past seven years (4.61 inches), and is short of the average at Lisvane (a mile away) for 47 years ending 1910 (3.68 inches), recorded by Mr. Priestley, M.Inst.C.E., the Cardiff Waterworks Engineer. The heavy falls of .73 and of 1.28 inches, however, on the 1st and the 12th ult., swelled the total for the month, and we have not infrequently had less rain in November. It was the number of days without rain that was so marked. On two periods of seven and twelve consecutive days respectively, no rain fell. Other noteworthy features were the low night temperatures, 15 and 14 degrees of frost on the 17th and 27th being the lowest readings of the thermometer, and the prevalence of east winds. My thermometer stands 4 feet from the ground, and on several days

when I recorded no frost there was evidently frost at the ground-level. *Harold Evans, Llanishen, Cardiff, December, 1915.*

APPLE GASCOYNE'S SCARLET.—After reading the remarks on the above Apple, I feel constrained to state my experience of it here. We regard it as one of our best and most reliable varieties. The tree seldom fails to bear heavy crops, and its fine appearance renders it one of the most attractive and beautiful objects in our orchard. The soil at Aldenham is of a very stiff, retentive nature, and our trees are fed liberally with house sewage. This Apple grows very freely, and seldom cankers. The soil of our orchard was deeply trenched, thoroughly drained, and the trees planted well on the surface, which I regard as one of the most important details for prevention of canker. Consequently, my experience is in direct opposition to that of Mr. Harry Williams. Mr. A. C. Bartlett quotes Mr. A. Bunyard as advising for this variety light pruning, but, strange to say, we prune the tree more severely than any other variety. I am sending you a photograph of one of our trees, which was planted as a maiden 25 years ago. In 1913 this tree produced over 20 bushels of fine fruit, last year 8 bushels, and this season 16 bushels of large, richly-coloured Apples. *E. Beckett, Aldenham House Gardens, Elstree, Hertfordshire.*

—That this Apple is one worthy of inclusion in every good collection as an exhibition fruit I agree; but for reliability I should not include it, and I have not found it a really good cooker. I agree with *H. W.* (p. 354) that the tree is much given to canker, even when grown in the best conditions. I have tried it on heavy soils and on light soils. *H. A. Cook.*

—Mr. E. A. Bunyard and *Southern Grower* recommend light pruning of this variety owing to its grossness of growth, but I hardly think this is the right treatment. My experience is that to prune hard, and then summer prune, has the result that fruit buds form and the wood gets thoroughly ripened. My trees have again borne well this year, especially espaliers growing on a warm border, which had a fine crop of Apples fit for exhibiting. Bush trees also bore very good fruit of a medium size. Gascoyne's Scarlet, with its fine colour and beautiful Peach bloom, is a good exhibition variety and culinary Apple, but is not to be recommended for dessert. I believe the tree fruits earlier when worked on the Paradise stock. *P. E. Cornish, Downs House Gardens, Yalding, Maidstone.*

YEW POISONING.—Mr. T. Smith has (p. 355) misquoted statements made by me on p. 340. I did not say that the Irish Yew is more dangerous than the common kind. What I said was that so far as cases of poisoning have shown, the Irish Yew is as poisonous as the typical form. He says this is only rumour. If he will look up the *Pharmaceutical Journal* for November 10, 1877, he will find the record of the death of a woman from taking the chopped leaves of the Irish Yew. The case attracted a good deal of attention at the time, and the late Professor Redwood in order to prove in Court the poisonous character of the Yew gave 50 grains of the fresh leaves to a rabbit, which died in five hours. My statement that the Irish Yew is as poisonous as the typical form is therefore not founded on rumour, but on fact. The second misquotation is that I said that vigorous and healthy animals are unaffected, or that they are so used to eating Yew that it does them no harm. What I said was, that healthy animals can get accustomed to the poison. I did not state that they were unaffected. Whether healthy animals are affected or not will depend upon the amount of leaves they eat in proportion to fodder at the time, or whether they have grown accustomed to eating it. If Mr. Smith had read the statements in Wilson's *Rural Cyclopaedia*, or in *Yonatt's Cattle: Their Breeds, Management and Diseases*, which are too lengthy to quote in this journal, he would probably have learnt "the something still to learn" that he asks for. I may add that taxine is contained in the seeds, but not in the pulp

of the fruit. This is decisively shown by a case recorded in the *Pharmaceutical Journal*, November, 1879, p. 397, in which a boy died from eating a handful of Yew berries which he crushed up and swallowed, stones and all, whilst his sister, who spat out the stones, was not affected. This is not the only fruit with poisonous seeds of which the pulp is not poisonous, for it is well known in India that monkeys eat the fruit of the *Strychnos Nux-Vomica*, the seeds of which contain strychnine. *E. M. Holmes.*

POTATO GORDON CASTLE.—I was pleased to note in your remarks of the Agricultural Show at Smithfield, p. 371, the statement that this Potato was the outstanding novelty. I grew several roots of this variety in the ordinary way of Potato cultivation—deep digging and incorporating a fair quantity of half-decayed farmyard manure and a sprinkling of fertiliser with the soil. I lifted the roots early in September, and had a fine crop of large, pebble-shaped tubers, with white, rough skins, and but little "eye." From one root I dug thirty-seven tubers weighing 10½ lbs. When cooked the flesh is white, mealy and excellent in flavour. As a main crop variety this Potato should have a bright future. *Grower.*

GREENHAM LODGE, NEWBURY.—Some little time ago I had the pleasure of walking through the grounds and greenhouses of Loyd H. Baxendale, Esq., at Greenham Lodge, Newbury. The gracefully decorative Palm Phoenix Roebelinii is much in favour; a number of good-sized specimens are grown, one of which had then reached the flowering stage. The Killarney Fern (*Trichomanes radicans*) is grown with great success. Originally it was covered with a glass case, but that has been relinquished for some years past, and the colony now covers a space of 5 feet by 3 feet, the fronds being in most excellent condition. The house in which it is grown faces the north. Just behind this house is a well-trimmed Yew hedge, on the north side of which was a colony of *Tropaeolum speciosum*. It had clambered through the hedge and was flowering profusely on both sides, being finest on the north. In the kitchen garden Rivers' Early Plum and Morello Cherries bore heavy crops on the north side of a wall. A few hundred yards from one front of the house is a deep gully or ravine, running through the grounds, and a picturesque effect has been produced by making the turf slope gradually from the house to the water. In various situations, right and left of the house, are groups of Conifers and other trees, including stately specimens of *Abies nobilis*, 70 feet high, that had reached this height in forty years from the seed. *Thuja plicata* has also grown well, forming stately, symmetrical trees. *Abies Pinsapo* and *A. cephalonica* have grown more in breadth than in height, and being situated far beyond the radius of any smoky town they are notable for the clean, bright colour of the foliage. The quantity of cones these trees produce adds greatly to their picturesque appearance. I counted something like three dozen cones on a small branch of *A. cephalonica*. Fertile seeds have been produced for years past, of which I saw evidence on a sloping bank near the bottom of the ravine. Originally a few plants were established on this bank, and allowed to take care of themselves; row many trees and shrubs, including *A. cephalonica*, have established themselves on a bed of heather. I noted seedlings about a foot high, or less, and others of various heights, up to 6 and 8 feet. Young trees of this species have long, spiny-pointed leaves, whereas those on all the smaller twigs of the coning branches are short and blunt. On the opposite side of the ravine a bold and picturesque piece of rockwork has been formed, planted with flowering and other ornamental shrubs in great variety. On a lower terrace was a massive clump of *Veronica Traversii*, 10 feet high and 87 feet in circumference, flowering and fruiting profusely. The clump consists of only three plants, planted out of thumb pots in 1892. *J. F.*

PRUNING OF APPLES (see p. 358.—I fear that I do not quite grasp *Southern Grower's* meaning in his note on the training of standards.

It seems to me that each of the 24 ends would be about 1½ foot from each other. How 16 comes in and the final remarks I give up. On p. 305, under paragraph 5, by a slip the word "grafts" was written in mistake for "cuttings" and escaped correction. *H. E. D.*

R.H.S. FRENCH BEAN TRIALS, 1914.—On p. 552, Vol. XL, April, 1915, *Journal of the Royal Horticultural Society*, a number of "horticultural" and "botanical" characters of the tried sorts are recorded, but there seem to be other matters which might well have received attention; indeed, two of these (flavour and development of parchment layer) I should consider before any other feature. First, presumably the Beans are only regarded as "Mangetouts," though this is not definitely stated; the value as "Flageolets" is especially important when food supplies are "as they are," and when the popularisation of the "Flageolet" needs fostering. Next in regard to hard matters, the question of stringed and stringless is answered; but whilst the presence of string is easily dealt with by the cook the presence of membrane or parchment layer is beyond her powers. In the judging of varieties as Mangetouts I do not think that any high award should be given to a variety in which membrane develops before the seeds are nearly, if not quite, fully grown, unless the flavour is extraordinarily perfect. In the column VIII. some of the stringless sorts are marked "Butter." Should not this note have been "Waxpod"? Is not the term "Butter Bean" best reserved to those Beans with seeds of creamy or buttery consistence, or alternatively as Butter Bean has two applications, is it not better to avoid it altogether? With regard to flavour a tabulation is no doubt difficult, and in most cases personal trial eventually has to be done; still it might be possible to give a rough idea of flavour values. True, the average Englishman has rarely found or looked for any flavour in the chopped-up mush of pods which he consumes with his beef. The values of the varieties for the production of dried beans may perhaps be gathered from the columns VI. and XVIII., in the latter of which one would have liked to see that some of the green seeded sorts had been submitted. In regard to Mr. Lavender's article (p. 367), is his classification quite correct? He makes "stringless" the equivalent of "Mangetout"; Vilmorin heads his pages (1) *à parchemin* and (2) *sans parchemin ou Mangetout*; the latter class being divisible into those *sans fils* and those not so blessed; and this agrees with what I have understood. *H. E. Durham.*

WOOLLY APHIS ON THE WILD CRAB (see pp. 298, 312, 339, and 369).—I agree with most of the observations made on p. 369 as to the limitations of attack by woolly aphid. Most, or all, galling insects have their limitations, if we could find what they are; but all are capable of making a fresh settlement, that is, in making a gall on a tree where none existed before. In the case of the woolly aphid, the bark must be sufficiently thin to enable it to reach the rich cambium layer with its beak, whatever other deterrent conditions may exist. Wounds, more or less severe pruning, and shelter I look upon as favouring conditions for an attack. Some years ago I had a young plantation of bush Apple trees under observation. They were in an open and sunny position, and neither crowded nor severely pruned. The young shoots were shortened about one-third of their length in winter. During July winged foraging forms of the insect established small colonies on the bark of the young and growing shoots, and by September the bark split longitudinally in places. I made sections of them to see what had happened. A large quantity of cellular and hypertrophied matter had developed in response to the irritation of the punctures made by the beaks of the aphides, forcing the true woody tissue apart. This was the commencement of a new gall, and if left undisturbed would have been perennial and permanent. Independently of what eggs may be laid, the imagos themselves hibernate in the cracks made, and the gall increases in size from year to year. In a neighbouring garden over the wall a row

of bush Apple trees, alongside a hedge, were galled on various parts of the stem or branches. The trees were young, and the galls may or may not have originated at points where a twig may have been removed; but older bush trees in the same garden, not sheltered by a hedge, and even more severely pruned annually, were not in any way affected by the pest. The gardens of the amateur or lay cultivator afford good examples of what this aphid is capable of doing when left in undisturbed possession for a number of years. The trees are often planted where there is no room for them to attain anything like their natural dimensions. When they begin to encroach upon something else they are cut back. The cambium proceeds to cover the wound with cellular tissue, forming a suitable nidus for the aphid. The side branches continue to be removed higher and higher upon the stem until the whole trunk is a mass of sores from the ground upwards, and during summer is grey with the woolly secretion and dropping in flocculent tufts to be carried away by the wind. This state of matters is largely capable of being controlled. *J. F.*

RHODODENDRON CAMPYLOCARPUM (see pp. 338, 355, 369).—It may interest your readers to know that when I was at Coombe Wood Nursery, in the late Mr. Howard's time, we hybridised *Rhododendron* F. D. Godman (forced) with the pollen of *R. campylocarpum* with success. The result was a bloom yellow inside and crimson outside the petals. It was shown about 1901, and named Colonel Thornycroft. I always considered it an interesting hybrid. We tried to cross *R. campylocarpum* with several other varieties at the same time, but only F. D. Godman was successful. The variety Colonel Thornycroft is quite hardy, of bushy habit, and flowers early. *Alfred Astley, Propagator to Messrs. Fletcher Bros., Ottershaw Nursery, Chertsey.*

AID FOR THE R.H.S. WAR RELIEF FUND.—The sale at the Perpetual-flowering Carnation Society's exhibition on the 8th inst., in aid of the R.H.S. Horticultural War Relief Fund, realised £34 12s. The Perpetual-flowering Carnation Society has, by resolution, asked me to convey to the donors of cut flowers, pot plants, and fruit their very cordial thanks and gratitude for so kindly sending contributions, and also to thank Mr. J. S. Brunton, Mr. Thomas Stevenson, Mr. Felton, Mr. Milton, and the ladies who assisted in the arrangement of the flowers. The two Misses Sherwood, Miss Mason, and my three daughters conducted the sale with the help of several gentlemen. *W. H. Page, Chairman of the Floral Committee, Perpetual-flowering Carnation Society.*

THE ORIGIN OF THE RADISH.—There is one point in Mlle. Y. Trouard Rielle's article on this subject (*Gard. Chron.*, December 11, p. 367), which seems to be very doubtful. She draws some distinction between heritable and non-heritable "specific" characters; such she regards as not being modifiable by cultivation. She is not alone in this view, but it is impossible "to prove a negative." To take her example. She says it is "in the anatomical structure of its silique that this character causes *R. Raphanistrum* to be, so to say, the antipode of *R. sativus*." Unfortunately, we are not told what this unique character is. Moreover, she makes no mention of *R. maritimum*, which is usually regarded as the source of the cultivated Radish. Mr. G. Bentham considers it a variety of *R. Raphanistrum*, as all the visible points of detail are more or less common with it. I do not know of any plant-organ, in whatever degree it may seem to be "fixed" under cultivation, which is not variable in some plant or other, from the root-tip to the ovule. Moreover, the cause can be in most cases obviously referred to the conditions of life, as in the structure of the root-tip of aquatics and all monocotyledons, and the degenerate ovules of parasitic plants. As a rule, while the vegetative organs change readily, the flowers are less sensitive to the same external conditions, but under cultivation floral changes are amazing. Not knowing the "anatomical" details referred to, I cannot provisionally accept the view that they can be of an "antipodal" significance. *George Henslow.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

DECEMBER 7.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Messrs. J. T. Bennett-Poë, J. Fraser, W. C. Worsdell, W. Hales, E. M. Holmes and F. J. Chittenden (hon. secretary).

Fruits of Purple Apples.—Mr. J. Fraser showed fruits of *Pyrus Niedzwetzkyana* and *P. floribunda purpurea* (= *floribunda* × *Niedzwetzkyana*), the latter being much smaller than the former and having some of the characters of *P. baccata*.

Large Ascidia in Savoy.—Mr. G. Wilson sent an ascidia of large size from the garden of Lady Katherine Somerset, Reigate Priory. This malformation is common in Cabbage foliage, and the funnel-shaped growth appears to be terminal. The funnel in this case measured about 10 inches across at its open end and as much deep.

Calliopsis aurantiaca.—Mr. J. T. Bennett-Poë showed an inflorescence of this striking *Amaryllid* from the Andes of Ecuador, and a further specimen of *Cypripedium* insignis Harefield Hall with a larger foliose spathe than that exhibited at the previous meeting.

Narcissus Fly Attacking Hippeastrum Bulb.—Mr. William Gay, of Crowhurst Park, Battle, Sussex, sent a bulb of *Hippeastrum* in which the larva of the *Narcissus* fly, *Merodon equestris*, was feeding. This pest has previously been recorded as attacking *Hippeastrum* as well as other greenhouse bulbs.

TRIAL OF HORTICULTURAL SUNDRIES, 1915.

The Council of the Royal Horticultural Society has made the following awards as a result of trials conducted at the Society's Gardens during 1915:—*Award of Merit* to the Four Oaks Co.'s series of spray nozzles adapted to every class of work; sent by THE FOUR OAKS CO., Sutton Coldfield, Birmingham. *Highly Commended*, Messrs. Weeks and Son's nozzle No. 3, an adjustable nozzle for every class of work; sent by Messrs. WEEKS AND SON, Maidstone. *Commended*, Messrs. Hartjen's nozzle F; sent by Messrs. HARTJEN AND CO., Noble House, Noble Street, London.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 2.—*Committee present:* Rev. J. Crombleholme (in the chair), Messrs. J. Cypher, P. Foster, A. R. Handley, A. Hanmer, A. J. Keeling, D. McLeod, W. J. Morgan, W. Shackleton, S. Swift, H. Thorp and H. Arthur (secretary).

AWARDS.

FIRST-CLASS CERTIFICATES.

Cypripedium The Ghurka (parentage unknown), a finely-shaped flower, having the dorsal sepal coloured chocolate-brown with band of apple-green edged with white; the petals and pouch are a dark shade of chocolate-brown. *C. Selene* (parentage unknown), a large bold flower of yellow shade; the dorsal sepal, which is 3 inches across, is yellow edged with white. The petals and pouch are of the same shade but lightly tinged with brown. Both shown by H. J. Bromilow, Esq.

AWARDS OF MERIT.

Odontoglossum Percultum var. *Black Knight*, *Odontodia Diana West Point* variety and *Cypripedium Troides The Tiger*. All shown by S. GRATRIX, Esq.

Cypripedium Georgius Imperator (Chas. Canham × *Leeanum*), from the Rev. J. CROMBLEHOLME.

Odontoglossum Watsonianum Merl Dene variety. Exhibited by A. J. OAKSHOTT, Esq.

FIRST-CLASS CULTURAL CERTIFICATES.

To Mr. E. ROGERS, for generally good cultivation of the plants in his group, and Mr. W. GILDEN, for *Cattleya Portia superba*.

GROUPS.

O. O. WRIGLEY, Esq., Bury (gr. Mr. E. Rogers), staged a magnificent group of over 120 plants, composed principally of *Cypripediums*, the insigne section being represented by the following yellow varieties:—*Gladys*, *Luciani*, *Sanderae*, *Sanderianum*, *Cobbiana*, *Ernestii*, *Chantini*, *Lindenii* and *Laura Kimball*, and, in the spotted section:—*Mrs. O. O. Wrigley*, *Kathleen Corser*, *Agatha*, *Constance*, *punctatum*, *giganteum*, *Dormanii*, *Bonhoffianum*, *Berryanum* and *Harefield Hall*. He also showed varieties of *C. Leeanum*, *Odontoglossums* in variety, *Vanda coerulea*, *Epidendrum vitellinum autumnalis*, *Masdevallia tovarensis* and others. (*Silver-gilt Medal*.)

R. ASHWORTH, Esq., Newchurch (gr. Mr. W. Gilden), staged a group for which a *Silver-gilt Medal* was awarded. Noteworthy plants were: *Cypripedium Queen Alexandra*, *C. insigne Sanderae*, *C. Rossendale*, *C. Germain Opoix*, *Odontoglossum crispum Amie*, *O. amabile Milo*, *Oncidium Forbesii*, *Odontioda Charlesworthii*, *Onciodora Cooksoniae*, and *Cattleya Portia superba*.

A. HANMER, Esq., Chester (gr. Mr. B. Wilson), was awarded a *Large Silver Medal* for a mixed group containing *Cypripedium Bingleyense*, *C. Niobe*, *C. Dreadnought*, *C. aureum superbum*, *C. triumphans*, *C. Leeanum Gratrixae*, and others; *Odontoglossum ardentissimum*, *Zygopetalum Mackayi*, *Vanda coerulea*, *Lycaste Skinneri*, *Dendrobium Deari*, *Dendrochilum Cobbianum*, *Oncidium Forbesii*, *Miltonia vexillaria*, and others.

Mrs. S. GRATRAX, Whalley Range (gr. Mr. J. Brown), showed *Cypripedium King George*.

MESSRS. CYPHER AND SONS, Cheltenham, were awarded a *Large Silver Medal* for a group of *Cypripediums*.

MESSRS. SANDER AND SONS, St. Albans, staged *Cypripedium Leeanum Téméraire* and *C. Gratrixae*, *C. insigne Grand Duke*, *C. Leeander var. Austral*, *Laelio-Cattleya Montreal* (*C. Hardyana* × *L.-C. Bella*), *Cattleya Fabia alba*, *Bulbophyllum hirtum* and *Coelogyne barbata*.

MESSRS. A. J. KEELING AND SONS, Bradford, showed *Cypripediums* in variety.

PERPETUAL-FLOWERING CARNATION. ANNUAL MEETING.

DECEMBER 8.—About a score of members attended the annual general meeting of the above society under the chairmanship of Mr. J. S. Brunton.

The annual report and financial statement were taken as read, and the society was stated to be in a satisfactory financial position. This condition has been brought about by all-round retrenchment, particularly in connection with the shows.

Although the financial statement shows liabilities of £16 10s., the assets in the shape of overdue subscriptions paid since the report was drawn up and other accounts amount to well over £30.

EXTRACTS FROM THE REPORT.

The society's membership has experienced a still greater shrinkage than was recorded in the annual report for 1914. Your committee, nevertheless, is pleased to report that the society is in a better position financially than it was a year ago, looks to the future with confidence, and reasonably expects that when circumstances permit, those who have fallen out will again identify themselves with the society. Several members are engaged in military service.

As in former years two exhibitions were held, one in the Royal Horticultural Hall, Westminster, London, on December 2, the other in the Corn Exchange, Leeds, on April 29 and 30.

It was announced that the prize money at the London show, except special prizes, would not be awarded owing to the lack of funds, caused by the falling off in subscriptions. Amateurs failed to show in the same numbers as formerly, but gardeners and trade growers made a wonderfully good exhibition. As was expected, there was a decided falling off in the gate receipts, only about one-fifth of the sum received the previous year being obtained.

At the close of the show the majority of the Carnations exhibited, through the generous actions of exhibitors, were sold by auction for the benefit of the Belgian Relief Fund, and realised £19 18s. 6d. In addition to this private sales of flowers during the day amounted to about £8. At the annual general meeting, following the show, the chairman presented

thus money to two Belgian refugee members, Messrs. V. Bouckenoghe and E. Draps Boudry, as a token of regard and sympathy from the members.

The provincial show was held at Leeds in conjunction with the North of England Horticultural Society. A very excellent show was the result. From a financial point of view the show was not a success, as the attendance was much smaller than anticipated, and our share of the gate money amounted to about £5. On the whole, the venture was far from being a failure. The show of Carnations was the largest and best ever seen in the North. Our society gained some publicity and several new members.

Conferences were held in connection with the shows in London and Leeds. On both occasions Mr. Montagu C. Allwood was the principal speaker, and his able lectures on Carnation culture, illustrated by lantern slides, were a source of interest and pleasure to large audiences.

Finance.—The accounts for the year have been duly audited and the financial statement is herewith presented. Your committee ventured last year to express the probability of a greatly reduced income during 1915. A comparison of the financial statements of the years 1915 and 1914 discloses the truth of this prophecy only too acutely. The falling off in membership and the resultant reduction of income has, however, been counterbalanced by the all-round reduction of expenditure; so much so, that the position of the society is sounder than it was last year.

Twenty-eight new members were added during the past year. Against these additions, however, there are a number of definite resignations.

Total membership at November 12, 1914 ...	381
Members paying arrears, 1914	27
Members joined to November 6, 1915	28
	436
Less resignations	26
	410

In submitting the committee's annual report the chairman said they had reason to be satisfied with the year's work, and the warmest thanks were due to all concerned.

On the motion of Mr. C. H. Taudevin, seconded by Mr. E. F. Hawes, Lord Howard de Walden was re-elected president. Mr. Taudevin and Mr. Laurence J. Cook proposed the re-election of Mr. J. S. Brunton as chairman of committee, which was carried unanimously. Mr. W. E. Wallace was re-elected vice-chairman, and Mr. Laurence J. Cook hon. treasurer.

Mr. W. E. Wallace proposed the re-election of Mr. T. A. Weston as hon. secretary, which was carried unanimously. Mr. Weston said he was perfectly willing to carry on the work the office entailed. It should, however, be remembered we were living in troublous times, and that the society might suddenly find itself without a secretary.

Mr. E. F. Hawes was re-elected show superintendent, and the same member, together with Mr. R. Pinches, re-elected hon. auditor.

The retiring members of the committee were proposed for re-election, with the addition of several other members. The following were elected:—G. Allwood, E. F. Hawes, Rev. J. Jacob, E. T. Willis, A. Grubb, R. F. Felton, J. G. Weston, T. Blackburn, V. Bouckenoghe (the latter a Belgian refugee member), S. Pascoe and P. M. Patterson.

The chairman referred to the good work done by Mr. W. H. Page in connection with the War Relief Fund stall, and a vote of thanks was passed.

Hearty thanks were extended to the Misses Page, Sherwood and Mason, and their assistants, for the work they had done in connection with the stall during the day.

Before closing the meeting the chairman handed Mr. V. Bouckenoghe a gift of money from various members as a token of their regard and sympathy. Mr. Bouckenoghe, in expressing his thanks, referred to the fact that he had studied at Kew Gardens some twenty-six years ago. He had been forced to leave his nurseries at Ypres, of which nothing but a few fragments remained. He hoped that he might be able to get back to Belgium in the spring.

NATIONAL CHRYSANTHEMUM.

DECEMBER 13.—A meeting of the executive committee was held at Carr's Restaurant on the 13th inst. Mr. E. F. Hawes occupied the chair. It was resolved to send letters of sympathy to Mr. Thomas Bevan, who was prevented from presiding as usual by reason of an accident, and to Mr. Caselton, who had been in ill-health for some time past. Arrangements have been completed with the R.H.S. to hold the show for

1916 at the Royal Horticultural Hall, Westminster, on November 9 and 10, 1916.

It was announced that the annual meeting of the society will be held at Carr's Restaurant on February 7 next. The meetings of the executive committee have been fixed for 1916 as follows:—September 25, October 23, November 20, December 18 and January 15, 1917.

The dates of the Floral Committee meetings were provisionally fixed subject to final arrangement. The lectures postponed are to be given as follows:—That by Mr. Percy Cragg on March 20 and that by Dr. Keeble on April 17, 1916. Several new members were elected.

SCOTTISH HORTICULTURAL.

DECEMBER 7.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on the 7th inst. Mr. Pirie, the president, was in the chair, and there was an attendance of 85 members.

Mr. H. H. Cook, gardener at Drummond Castle, gave a lecture, illustrated with lime-light views, of Drummond Castle and its gardens. He showed a beautiful series of views of these famous gardens as they were laid out in 1630, as they were in 1840, and as they are at the present time. He also gave an interesting account of the ancient family of Drummond, the first of whom came over with William the Conqueror, and of the historic castle, of which he showed photographs after its destruction by Cromwell in 1658, as it was in 1715, 1745, and 1842, and as it is at the present time.

The exhibits were new Chrysanthemums and Apple Ecklinville Seeding, from Mr. W. G. Pirie, Dalhousie Castle, Midlothian; Chrysanthemum Purity, and a yellow sport therefrom, from the EDINBURGH PUBLIC PARKS DEPARTMENT, per Mr. M'Hattie; *Luculia gratissima* from Mr. D. Kidd, Carberry Tower, Musselburgh. A *Certificate of Merit* was awarded to Mr. Pirie for a seedling Chrysanthemum named Mrs. M'Hattie, and a *Cultural Certificate* for the group shown by him.

The convener of the Finance Committee, Mr. Fife, submitted a preliminary statement of the Chrysanthemum Show accounts, which showed a debit balance of approximately £150, and Miss Burton, the lady who organised the sale in conjunction with the show in aid of the War Horticultural Relief Fund for our Allies, reported that she expected there would be a sum of between £90 and £100 to hand over to the Fund.

On the motion of Mr. M'Hattie it was agreed to take no action regarding the holding of a show in 1916, but that, should circumstances permit of a show being held, the Council be empowered to reconsider the question at a later date.

DEBATING SOCIETIES.

BRISTOL AND DISTRICT GARDENERS'.—The usual fortnightly meeting of this association was held on Thursday, the 9th inst., Mr. H. Woodward presiding. Mr. C. Basham, a member of the Newport Gardeners' Association, read a paper entitled "A Few Hints on the Cultivation of Vegetables." The lecturer gave many practical hints for the cultivation of Potatoes, Peas, Runner Beans, Onions and Celery.

BRITISH GARDENERS' (Watford Branch).—The monthly meeting of the Watford branch of the British Gardeners' Association was held on Thursday, the 9th inst. There was a very good attendance, and Mr. F. Jones presided. Mr. C. Fletcher gave a lecture on "Industrial versus Political Action."

DUMFRIES AND GALLOWAY GARDENERS'.—The annual meeting of the Dumfries and Galloway Gardeners' Association was held in the Wesley Halls, Dumfries, on the 6th inst. The treasurer's report was considered a satisfactory one, and was adopted. The following officers were appointed: President, Provost Arnold; Maxwelltown; vice-presidents, Mr. W. Hutchinson, The Gardens, Terregles, and Mr. John Grollan, nurseryman, Dumfries; secretary and treasurer, Mr. W. Taylor, Brocklehurst Gardens; a committee was also appointed.

WARGRAVE AND DISTRICT GARDENERS'.—At the meeting held on Wednesday, the 1st inst., Mr. W. H. Scott, gardener to Capitan Cleeve, read a paper on "Fertilisation." He described the organs of a flower and explained the various ways designed by Nature for ensuring fertilisation of the ovules. Pollination by artificial means was described. Hybridisation and its effects were also dealt with.

Obituary.

JOHN JARDINE.—Mr. John Jardine, gardener to Captain Murray, of Murraythwaite, Ecclefechan, Dumfriesshire, died in the Royal Infirmary, Dumfries, on the 8th inst., aged 61. He was for many years in the employment of the Murray family, and was held in high estimation as a gardener and because of his sterling character.

M. MONTIGNY.—The death is announced of M. Montigny, the Chrysanthemum specialist of Orleans. He was a frequent exhibitor of novelties at the French autumn shows. His son, who passed some time in England, predeceased him, having been killed on active service some months ago, as already reported in these columns. M. Montigny was an officer of the Mérite Agricole and a member of the National Horticultural Society of France.

ERNEST WESTON.—From the *Florists' Exchange*, of America, we have received news of the death of Ernest Weston, a market gardener, who died at Newport, R.I., U.S.A., on October 26. Mr. Weston was born and obtained his early training in England, but emigrated to America and there carried on a successful business.

LAW NOTE.

DEATH DUTIES ON TIMBER.

THE Royal English Arboricultural Society calls the attention of all landowners, their agents and solicitors to the important provisions contained in Section 9 of the Finance Act, 1912 (2 & 3 Geo. V. ch. 8), relating to Death Duties on timber and underwood. Under that Act:—"Where an estate in respect of which Estate Duty is payable on the death of a person dying on or after the 30th day of April, 1909, comprises land on which timber, trees, wood, or underwood, are growing the value of such timber, trees, wood, or underwood shall not be taken into account in estimating the principal value of the estate or the rate of Estate Duty, and Estate Duty shall not be payable thereon, but shall at the rate due to the principal value of the estate be payable on the net moneys (if any) after deducting all necessary outgoings since the death of the deceased which may from time to time be received from the sale of timber, trees, or wood, when felled or cut during the period which may elapse until the land on the death of some other person again becomes liable or would but for this sub-section have become liable to Estate Duty."

The practical effect of this and the other Acts which it is not necessary to quote is that if an owner die leaving an estate worth £105,000 and the sale value of the timber on it is £10,000, his successor should only pay estate duty on £95,000. As long as he stands possessed of the land he will pay estate duty only on such timber, trees or wood as he cuts and sells year by year after deducting all necessary outgoings, an expression in which the Estate Duty Office, according to their present practice, include expenses incurred in replanting timber ground which has been cleared or thinned out, so far as necessary to maintain the woodlands in the state in which they were at the death of the previous owner. No duty is payable on the money realised by the sale of underwood when cut, which escapes the payment of duty altogether, except when it is sold as part of the land. If the owner should sell the land he will be liable to pay the amount of death duty remitted, but if he should die no further sum will under any circumstances be chargeable against his estate in respect of the timber.

The effect of the Act is far-reaching:—

- (1) Because of the large amount of death duty that may be remitted.
- (2) Because the deduction of the timber may bring the whole of the deceased's estate into a lower scale of duty.

In the case of (1) it should be remembered that timber often has two distinct values, which we may call "primary value" and "secondary

value." The primary value is the price which the timber would fetch, apart from the land, and in the case of young plantations this value may, or may not be reduced to nothing, according to the age of the plantations. The secondary value of timber is the value which is due to its ornamental character, its improvement of sporting, its usefulness for shelter and for shade or for other purposes. If a park contains timber of the primary value of £1,000, and the mansion and the park are let at £400 per annum, on a repairing lease, the mansion and park may be valued for estate duty at £400×25=£10,000. If the property is valued in this way on a rental basis, it is, in the majority of cases, correct to ignore the primary value of the timber for the purpose of the valuation, because the property would not command the same rent if the timber were felled, and the secondary value of the timber exceeds its primary value for the purposes of such a valuation. Although the primary value of the timber may have been ignored in making the valuation, it is in all cases correct to deduct it for the purpose of paying estate duty. In the above instance the primary value of the timber (£1,000) may therefore be deducted from the valuation of £10,000, and estate duty paid on £9,000 only.

In the case of (2) if the first example be taken, if the timber were not deducted the successor would pay estate duty at the rate of 10 per cent. on £105,000, equivalent to £10,500, but if the timber be deducted it will bring the principal value below £100,000, and consequently into the 9 per cent. scale, and the duty payable would be 9 per cent. of £95,000, or £8,550 only.

It will thus be seen that there is a great benefit to be derived from the Act if advantage be taken of it. On the other hand, if it be neglected not only will there be a serious over-payment of duty, but it will be assumed that the timber was taken into account at the time of the valuation, and whenever timber is cut death duty on that part will become payable a second time, and the attempt to recover the duty originally paid in error will, even if successful, involve the owner in a certain amount of trouble and expense.

It is always advisable to have the value of the timber at the time of the death ascertained and accepted as correct by the Estate Duty Office, because, if the timber is sold when growing, either as part of the land or separately from the land, duty is payable on the value of the timber as at the death, and not on its value as at the sale. Thus, if the first example be taken again and the timber be sold when growing for £15,000, either separately from or as part of the land, the owner will only pay duty on £10,000 instead of on £15,000. It will be obvious that in cases where there has been an appreciable increase in the value of the timber between the date of the death and the date of the sale some part of the duty will be saved if it is practicable for the owner to sell the timber when growing and allow the purchaser to cut it.

The above remarks relate to estate duty, but with one important exception they also relate to succession duty, an additional duty which, generally speaking, is payable in all cases except in the case of small estates inherited by lineal ancestors or descendants of the deceased. The exception referred to is that the rate of succession duty payable varies from 1 per cent. to 10 per cent., not according to the value of the estate, but according to the degree of relationship between the deceased and the successor.

THE SECRETARY.

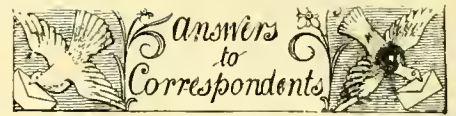
The Royal English Arboricultural Society.

Haydon Bridge,
Northumberland.

GARDENING APPOINTMENTS.

Mr. Fred Davidson. for the past two years Gardener at Dissington Hall, and previously at Ford Castle, Northumberland, as Gardener to Mrs. BLACKETT, Acorn Close, Sacriston, Durham.

Mr. F. A. Hicks. late Gardener in charge of the Estate at White Webbs Park, Enfield, Middlesex, as Gardener to W. MIDDLETON CAMPBELL, Esq., Fen Place, Turners Hill, Sussex.



BEGONIA GLOIRE DE LORRAINE: F. P. H. There is no disease present in the Begonias you submit to us. The failure is due to an error in cultural conditions, and we should be inclined to suspect that it was due to too much dampness in the air. Give the plants less water, and ventilate the house early in the day, when we expect you will find the unfavourable symptoms disappear.

DESTROYING TREE STUMPS: E. S., Kilkenny. The lime tree stumps and roots can be killed by boring holes an inch or so in diameter well into the main roots and filling them with weed-killer. At the same time, bore a few holes around the outside of the belts just within the bark and let these be filled in a like manner. The most efficacious method of destroying the bolls and roots after they are dead is by the introduction of spores of parasitic fungi. It is sometimes recommended that holes be bored into the stumps to penetrate more than halfway through them, and that the holes be filled with saltpetre and paraffin or water, corked up tightly and allowed to remain for three or four months. Then by filling the holes with paraffin and applying a light the stumps are said to smoulder away. Unfortunately this method does not always answer expectations.

MALE SERVANT'S LICENCE: A. L. You are legally liable to take out a male servant's licence for your gardener. The fact that he does odd jobs in addition and is not eligible for military service does not affect the point.

NAME OF PLANT: North Devon. The specimen was too withered to identify.—*F. J. Cavan.* Gomphrena globosa. You can obtain seeds from some seedsmen in several tints. The plant is a very good decorative subject. Sow the seeds in spring, prick the seedlings off, several together, in a pot, and grow the plants in a greenhouse or frame.—*J. E.* Geranium pyrenaicum, so far as can be determined without flowers.

SOIL FOR POTTING: J. W. The bad results probably arise from using too much horse manure in a fresh condition in the compost. Mix now one-fifth soil and horse manure, adding about a 60-sized potful of basic slag to each barrowload. Keep the hen or sheep manure to make liquid manure with which to water the roots when the plants are growing.

SOILS AND POTASH: An Amateur. QUESTION.—In the special leaflet No. 42 of the Board of Agriculture interesting and instructive remarks are made, but there is no distinct statement that heavy loams and clays contain stores of potash. Is not this the case? Would the old treatment recommended by Loudon of paring and burning such soils render available the supply of potash? The fact that Potato crops are abundant on clay soils proves that the potash is accessible without burning. **ANSWER.**—All soils except the lightest sands, but especially clays, contain potash sufficient for several hundred normal crops, but it is in such an insoluble form as to be very slowly available for the plant. Paring and burning does set a certain amount free in addition to that contained in the ash of the vegetable matter consumed, but it is a wasteful process (because of the loss of nitrogen and humus), and can only be recommended when bringing into cultivation the roughest of old grass or uncultivated land.

Communications Received.—*F. N.*—*W. S.*—*T. B.*—*P. A.*—*R. M. S.*—*V. A.*—*Et Cie.*—*H. C.*—*C. G. K.*—*A. T. H.*—*W. A. C.*—*H. E. D.*—*F. A. H.*—*J. R. B.*—*A. T. A.*—*A. F.*—*W. & J. B.*—*A. C. B.*—*C. H. H.*—*J. D.*—*G. R.*—*J. H.*—*R. D. G.*—*A. J.*—*E.*—*J. H.*—*B. G. D.*—*S. A. J.*—*C. A. G.*—*K. E. S.*—*G. M. T.*—*F. E. D.*—*T. E. B.*—*E. H. B.*—*A. S.*—*J. C.*—*A. O.*

THE

Gardeners' Chronicle

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DECEPTIVE TITLES IN GARDENING BOOKS.

THE circumstance of one person writing a book, and asking another to attach his name to the title as its putative author, which is believed to have occurred in *Every Man His Own Gardener*, is generally regarded as unique in the history of gardening literature. These notes will show, on the contrary, that a number of books on gardening have been published the authorship of which has been attributed to the wrong individual; and that others have been produced under a wrong name deliberately to deceive. If we accept Fitzherbert's *Boke of Husbandry* to be the earliest treatise to touch, however slightly, on gardening, we are at once face to face with the fact that here is a book that for centuries has been accepted as the work of the wrong person. No one can carefully peruse its contents without arriving at the conclusion that it was written by one whose life was devoted to agricultural pursuits, and in an especial manner to the breeding of and trafficking in horses, and therefore could not have been a judge eminent in his day. Not long subsequent to the publication of this work, one of the two earliest books that treated specially of gardening was given to the public as the outcome of the experience of one Didymus Mountain, and the matter in both being very similar, though of unequal extent, it has been a subject of general agreement that the Mountain of *The Gardener's Labyrinth* and the Thomas Hyll of *The Profitable Arte* are one and the same person. Gervase Markham, a later writer and compiler of books on rural economy, has had several volumes attributed to his

pen, for none of which he was responsible. The first in point of time is *The Country Farme*, translated by Richard Surfleet (1600 and 1606), which Markham re-issued in 1616, with additions from Olivier des Serres and others, and some slight ones of his own. *The Country Housewife's Garden*, a little larger than a tract, has repeatedly been attributed to Markham, yet it bears in its pages incontestable evidence of having been produced by W. Lawson, the author of *A New Orchard*, who also, in the preface to the last-named, mentions the other as his work. The only plausible reason for placing this to Markham's credit is that it was published from the year 1623 onwards in a volume composed of essays on agriculture, gardening, housewifery, bee-keeping, etc., the majority of which were written by Markham. A slight tract called *The Husbandman's Fruitful Orchard*, first published in 1604 by the title of *The Fruiterer's Secrets*, has for a similar reason sometimes been considered one of Markham's works, but its authorship is unknown. Subsequently a composite book, termed *The Countryman's Recreation* (1640), has been also, but wrongly, attributed to the same person. Things appear to have progressed normally till after the commencement of the next century, with the exception of a portion of *The Boke of Husbandry*, augmented by extracts from other writers, having been published in 1669 by the title *The Epitome of Husbandry*, by "S. B." There is little in this volume, however, relating to horticulture.

One of the blemishes of the Augustan Age of English literature was the congregation in the metropolis of a class of writers and publishers who were equal to almost any infamy, and gardening and its followers did not escape the attention of these people. John Cowell's book, entitled *The Curious and Profitable Gardener*, affords an instance of how people were deceived. This volume was published in 1730, obviously called into existence because of an Aloë that flowered in Cowell's nursery at Hoxton in the previous year. Two years subsequently the volume was presented to the public as *The Curious Fruit and Flower Gardener*, and on examining a volume offered in 1733 by the title of *The Compleat Fruit and Flower Gardener*, "the Third Edition, corrected, and adorn'd with Cuts, by R. Bradley, late Professor of Botany in the University of Cambridge and F.R.S.," we discover a collection of the same sheets, unchanged in any particular save the contents of the title page. To the unfortunate people who might have purchased this book in the expectation of securing the results of the latest labours of the very popular professor there was some compensation for them in the two tractates appended, the one on fruit trees, the other on Potatoes. The first of these is a remarkable contribution to practical pomology, and would go far to repay the outlay on the book. Bradley, shortly before his decease, contributed the notes to *The Fruit Garden Display'd*; and the notes in *The Flower Garden Display'd*, a companion volume,

published in the same year, are so much in his style that one cannot but conclude that he was the author. Invariably we find the authorship attributed to Furber, the nurseryman, whose name appears on the title page, but not as the author; or to Sir Thomas More, whose brief treatise on window gardening is appended to the second edition. An attempt to trade on two well-known names was made in the year 1717. The Rev. John Laurence had published *The Clergyman's Recreation*, followed by *The Gentleman's Recreation*, or the second part of *The Art of Gardening Improved*; and then came *The Lady's Recreation*, an earlier work with the addition "or the Third and last Part of *The Art of Gardening Improved*, to which are added Observations concerning variegated greens by J. L." Mr. Laurence quickly, in another of his books, disclaimed all knowledge of this rather impudent attempt to misuse his name and fame. The volume was credited to the pen of Charles Evelyn, Esq., and to this day the absurdity of attributing it to a son of John Evelyn, author of *Silva*, is still perpetrated.

In a recent article reference was made to the custom of Dr. John Hill of publishing under the names of other people. There is another volume which might have been added to the list, viz., Dick's *New Gardener's Dictionary*, which is to a large extent Hill's, though parts have been extracted from the books of other writers. Even the thirteen copper plates "engraved for Dick's *Gardener's Dictionary*," are taken from Hill's *Eden*, only reversed, and, like it, this work was issued in weekly parts.

There may be a few other books not above suspicion as to their authorship, but those mentioned, with *Every Man His Own Gardener*, are at least the most important up to about the year 1770, when the custom seems to have dropped for some time. In 1804 a book designated *A Complete Dictionary of Practical Gardening* was published as the work of "Alexander MacDonald, Gardener." Loudon declares that the real author was Dr. R. W. Dickson, a writer on agriculture. Anyhow, the matter of the two volumes is abstracted from other books. They are well illustrated with coloured plates by Sydenham Edwards, these plates doing duty in another work with a different letterpress. In 1823 an anonymous, nicely written book on plants cultivated in the house appeared by the title of *Flora Domestica*, and the authorship has been ascribed alternatively to one of two persons; the one, Henry Phillips, who wrote a series of books very similar in character, and the other a Miss Kent. In the volumes bearing his name Phillips never mentions this book, and when his *Flora Historica* is compared with it, along with other divergences we find the *Polyanthus* of the first-named always *Polyanthos* in the latter; and while Phillips spells "Periwinkle" correctly, in *Flora Domestica* it is always "Perwinkle." There are, moreover, other divergences which suggest that Phillips is not the author. R. P. Brotherston.

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

XXIII.—THE HALLS OF HEAVEN.

AFTER a while we wearied of a life that consisted chiefly of counting the petals on each lovely little new flower as it opened. Clearly it was still too early for Wolvesden, so we decided to take a tour round the district, and visit the famous abbeys immortalised by Kozloff and Przewalsky. So down the valley our train adventured under magnificent northward-facing slopes of the Red Birch, down to the Da-Tung river, and across the huge cantilever bridge of wood that the monks have put up for the sake of the toll. In the hot dry banks along the hills

perfectly certain of your morals as to feel sure the scratched crevice, in the event of a false step, will not prove a short cut to futures less pleasant than the halls of heaven—your way lies up over a vast fell, and then down by an execrable track, till you are back again, after all your labours, in the same river plain that you had left at the bridge. The first ascent is up a lovely little ghyll, indeed, and thence through a no less lovely coppice; but soon you come out upon the hot and barren loëss, which here is exactly like a great Sussex down, with crowded dwarf humps of Caragana taking the place of Gorse.

Here there is an Iris. Remember, books are far from me, nor have I ever been able to afford the last and classical word on the race; so

Stellera that springs everywhere on the loëss land is not yet open, while the magnificent widening view of the Alps lies all behind.

So we descend into a lateral ghyll, and thence debouch on the river-plain. A few minutes more and we are in the Halls of Heaven. The Halls of Heaven are Kozloff's "Cheterton," by a very easy corruption of its Thibetan name, "Chorten Tang" (the Hall of the Chorten; while Tien Tang Ssu is the Chinese—the Hall of Heaven). It is a large village of low, white-washed, monastic houses, with big churches rising here and there from courts in which is now blossoming a very beautiful bush Lilac of great stature, with flowers that open of so warm a tone that from afar I thought it must be a Judas tree. The abbey nestles most snugly into a bay of blazing barren precipices, on which—so closely do the monks enforce the Holy Law—the shy bighorn sheep of the mountains are not afraid to browse and harbour, flitting over the downs like so many donkeys within a call of the persistent string of pious persons always going in procession round this populous and popular establishment. From its hot and cosy enconcement the abbey looks out across a wide plain of lawn grass, fine and level as a race-course, to where the river shingles are masked by filmy Poplars that form a lovely, dappled park of shade, with a flat floor of sand; while beyond the river rises fold over fold of magnificent forest—Pine and Spruce—the only one that I have seen in all the region, remarkably beautiful, but dry as a bone, the property of the abbey, and as such scrupulously preserved.

But of all the attractions that so amply entitle this delightful place to its name, perhaps the most poignant is that of the Iris that fills that plain of lawn, and turns it in May to a rippled sea of palest water-blue, for this is yet another of those loëss-loving Irises of China, from Sining upwards, abounding in such enormous profusion that often you see whole patches of the mountain emerald-green with its unbroken tide, and your heart sickens, for you know you are coming on to the loëss again, with all the dullness of its flora. This Iris forms such clumps as you may judge of from its portrait (see fig. 140), and flowers with such abundance; but only in the hardest, hottest and poorest flats of the loëss, for, where it gets to richer soil and moisture it waxes fat and runs all to foliage of glaucous tone. The flowers are really lovely, though a greater amplitude of fall would improve them. Their colouring is of dalmatica's delicate lavender-blue, but the falls are mainly of a greenish or creamy-white, hemmed with a more or less deep and vivid feathering of a violet usually slightly deeper than that of the standards. The pollen is white, and the leaves at flowering time spear up here and there among the blossoms, but elongate afterwards, I think, as also do the seed-scapes, with their one or several peduncled pods. Lovely as it is, though, it has yet a further charm in its radiant sweetness, which is so exactly that of Hyacinths that what with this and the packed abundance of the blossom one can hardly doubt that one is walking in ecstasy through some well-planted nursery of Holland in full blow. The sweetness of that Iris plain was something indescribably entrancing. It was such a shock to me, discovering that a very common Iris in a not untrodden district could prove a new species, that I no longer now believe all Chinese Irises to be stale Cabbage to the learned; and, for the present note, will think of this one as *I. sp. "hyacinthina."* It yields albinos not uncommonly and sometimes beautifully. When introduced its only chance of floriferousness, I fear, will be in the hottest, hardest, poorest, driest, pebbliest clays in the South of England. There is still another Iris too, a rare occurrence, hanging from loëss banks amid scant scrub, on only the most torrid faces of the blazing slope above the monastery. *I. sp.*



[Photograph by Reginald Farrer.]

FIG. 139.—A CORNER OF THE IRIS PLAIN AT THE HALLS OF HEAVEN.

Primula stenocalyx was in beauty, so abundant that even my enthusiasm grew weary, while the grass was spangled on the open slopes with the blurred-eyed flushes of the *Androsace*. When you have got across the bridge there is a short cut to the Halls of Heaven, which lie almost in sight in their wide plain (see fig. 139), about a mile down the river. But bluffs and precipices interpose, so that, unless you dare that short cut along the stark face of the cliff—an economy of time that I do not recommend, unless you are so

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26, October 17 and 31, November 14 and 28, 1914, January 2, February 27, March 20, April 10 and 24, May 1, 15 and 29, June 12 and 19, July 3 and 10, and November 13, 20 and 27, and December 11, 1915.

pounce not and be propitious, if I whisper that this Iris reminded me of *I. prismatica* from afar. It is a rather dowdy, spidery thing, with miserable narrow falls and standards and styles of vinous violet (the styles lying close along the falls, while the tall standards stand erect); the blossoms peer amid the much taller narrow foliage, and the plant would not deserve attention were it not for the entrancing and pervasive fragrance of its flowers—a hot and piercing sweetness of Violets, rivalling the finest efforts of *I. reticulata*. Thus it claims notice incessantly, as the path winds up the long hill-side, amid the gold of the *Caragana*, with nothing else to distract the mind, for the

"oinops" is a curiously well-balanced little fleur-de-lis, rising on a stem of 4-6 inches above the narrow stiff leaves, not very pointed, and rather glaucous (they elongate afterwards, as their lingering relics show). From the double spathe-valve, large and inclined to be scarious, escapes the flower. Its standards are of diaphanous lavender, its styles of livid blue, its pollen white, its beard of gold, and its fall of clarety-purple, rich as velvet, with a flush of deep blue that runs from the beard. It has altogether a lurid and thunderous beauty of its own, though little scent—a small-clumped plant which I have only seen with some half-dozen scapes at the best. But it cannot compete with the hyacinthine loveliness of the other, which is the special glory of these Heavenly Halls and all the region thereabouts. *Reginald Farrer.*

NOTICES OF BOOKS.

GARDENS AND SUNDIALS.*

IN both these books the pictures form the *raison d'être*, yet the text is attractive, too. The book on gardens is made up of a number of short essays, both ancient and modern, in praise of gardens. The first one is by the Hon. Mrs. E. V. Boyle, who talks delightfully about the gardens of Italy. We are glad to find also included William Lawson's quaint essay on "The Pleasure of an Orchard" and the inimitable introduction to Gerard's "Herball." There is also an article by Sir Walter Scott, in his own stately style, and Richard le Gallienne's well-known "The Joy of Gardens."

The illustrations, each pasted lightly on a mount of soft dun hue, are appreciatively and daintily carried out. Perhaps it is only fair to the artist to remark that the printer does not appear to have done her strict justice. We are stongly tempted to doubt the authenticity of much of the colouring, which displays the shortcomings unfortunately inseparable from English colour-printing.

But the choice of subjects and the form of the drawings are so pleasing, and in many cases so original, as to leave us in the main satisfied.

Fascinating as is this book on grey old gardens, perhaps the one on sundials is even more so. After a short introduction to the subject by Launcelot Cross, the mind is allowed to wander at will through a whole gallery of sundials, mostly hoary with age and beaten with the storms of centuries, collected and delineated with the patience only given to the true lover. Some of the illustrations are in colour, but most are drawings in soft grey and white, giving a most vivid impression of the ancient, time-worn originals. On every page is a sundial, and opposite to it a page of inscriptions—inscriptions in many languages and many styles, new and old, appropriate, and (sometimes even grotesquely) unsuitable. We are sorry to see that one motto-maker has mutilated a verse of the old Persian magician, so that it reads:—

"'Tis nothing but a magic Shadow Show,
Played in a Box whose Candle is the Sun,
Round which we Phantom Figures come and go,"

the omission of the first line completely destroying the rhythm. An example of vague pessimism is to be found in the gloomy remark, "Yesterday's gone, to-day is here; To-morrow never may appear."

Of the drawings we have already spoken in terms of praise. The coloured illustrations also, not so numerous, are executed with grace and delicacy, though hardly (as is to be expected)

with the same precision. The frontispiece, which shows a beautiful dial in the gardens at Friar Park, Henley, bears under it the appropriate inscription, "Methinks it were a happy life, To carve out dials quaintly, point by point . . ." But this constructive pleasure can hardly exceed by a great deal the pleasure it must have given to the artists and author of this little work to collect so carefully and delineate so charmingly the dials here represented.

Every lover of ancient gardens will enjoy these books. They bear within their pages a magic charm which will carry the reader forward over all the dreary winter and wet, cold spring to the days of high summer, the days of blue sky and spreading leaf and warm, genial air. In such days these books were made, and the sunshine which shone on easel and paper has become imprisoned in their pages.



FIG. 140.—IRIS SP. ("HYACINTHINA") AT THE HALLS OF HEAVEN. (See p. 390.)
(Photograph by Reginald Farrer.)

CULTURAL MEMORANDA.

BEGONIA GLOIRE DE LORRAINE.

THIS is one of the brightest and most useful of winter-flowering plants, and can be maintained in flower from the end of September to the end of April. It is not necessary to grow Begonias in a house by themselves; I have grown them successfully with Melons and Cucumbers. It is essential to obtain good cuttings, which can be rooted in fine leaf-mould and sand. Place about six cuttings in 3-inch pots; prepare a box by placing in it a layer of ashes, then place the pots in the box and cover them with glass, which must be turned every day. Put some bricks on the hot-water pipes, and stand the box thereon. In about three weeks the cuttings should be rooted. Pot them singly in 3-inch pots, and finally in 5- and 6-inch pots, using the following compost:—Two parts fibrous loam, one of flaky leaf-mould, one of manure from a spent Mushroom bed, and one of dried cow manure, with sufficient sand to keep the compost porous. Mix the soil a few days before using, and add about a teaspoonful of alphon to each bushel of soil. Pot lightly in each case. Manure and soot-water may be used alternately for watering during the growing season. Do not syringe overhead, but well damp the space between the pots with liquid manure. Do not stop the plants, but allow them to break naturally. Staking and tying should be carefully attended to. These plants also do well in bas-

kets, which should be lined with moss. Place about three plants in each basket, according to size. Fumigation should be practised, even if the plants seem quite free from insect pests, and beginners would be well advised to obtain clean, healthy, young plants from a reliable source. *J. W., The Gardens, Stretton Hall, near Stafford.*

TREES AND SHRUBS.

BERBERIS WILSONAE.

MANY seedlings of this species have been reared in the gardens of the Royal Horticultural Society at Wisley, and in a batch planted out a few years ago, the majority show such variety as to revolutionise our idea of the habit and general characteristics of the species. I saw these plants, late in autumn, and noted only two

specimens that resembled the low-spreading bush to which we have been accustomed at the meetings at Vincent Square. Those were furnished with berries along the whole length of the young branches, and the two plants above mentioned conformed to this fairly closely. Other plants at Wisley, however, have developed strong, upright stems, 5 feet to 6 feet high, furnished with clusters of berries towards the apex only. If these tall stems develop arching and drooping branches, furnished throughout with clusters of berries, it will mean that *B. Wilsonae* is a taller shrub than the early introductions indicated. On the contrary, if the branches assume later an ascending or upright direction, this *Berberis* will be entirely different in aspect from the older existing bushes. Evidence was not lacking that the leaves vary greatly in duration. Some bushes were almost defoliated at the end of November, but others bore their full complement of foliage. If these characters are maintained they would do much to break down the distinctive characters of *B. subcaulialata*, which is evergreen, though otherwise closely similar. These plants were raised from seed set naturally on one of two plants of *B. Wilsonae* which came originally from Messrs. J. Veitch & Sons. The differences between the seedlings are so great as to suggest either that *B. Wilsonae* is a pleomorphic form or that cross fertilisation has taken place. But against the latter view it may be urged that the parent plant is far removed from any other *Berberis* in the gardens. *J. F.*

* *Corners of Grey Old Gardens.* By various authors, with illustrations in colour by Margaret Waterfield. (London, T. N. Foulis.) Price 8s. 6d. net. *The Book of Old Sundials and Their Mottos.* With introduction by Launcelot Cross. Illustrations in colour by A. Rawlings, and drawings by Warrington Hogg. (London, T. N. Foulis.) Price 3s. 6d. net.

EDITORIAL NOTICE.

Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the Literary department, and all plants to be named, should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are mis-directed.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 38.7.

ACTUAL TEMPERATURE:—*Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London, Wednesday, December 22 (10 a.m.): Bar. 29.8. Temp. 49°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—

Dutch Bulbs, at 12; Border Plants and Shrubs, at 1.30, by Protheroe and Morris, 67 and 68, Cheap-side.
1,440 c/s Japanese Lilliums, received direct by Protheroe and Morris, at 3.
Rose Trees, Shrubs, Perennials, etc., at Stevens's Rooms, King Street, Covent Garden.

THURSDAY—

Roses, by Protheroe and Morris, at 1.

FRIDAY—

Dutch Bulbs, at 12; Border Plants and Shrubs at 1.30, by Protheroe and Morris.

1915.

THE war has set its mark deep in the annals of the past year.

We have to mourn the loss of many men who as amateur or professional gardeners practised in normal times the peaceful art of horticulture. The call to join His Majesty's forces has been answered more readily by no section of the community than by our young gardeners, and in their absence our gardens perforce suffer from lack of labour.

Hence, as was inevitable, the art and craft and trade of horticulture have suffered. Those of our Allies over the sea have, alas! suffered yet more grievously, and to the gardeners of Belgium and Northern France we continue to extend our deepest sympathy. Many of the older men are now in this country, and to manifest in some slight way our feelings of goodwill we have week by week set apart a "French" page in this journal for their perusal. We beg them to regard this not as a mere courtesy but as a token of the unity which subsists between us.

With the enlistment of our young gardeners the heavy task of keeping our gardens in being has fallen on the older men. That task they have discharged most admirably, not only by undertaking the work of the young men but also by helpful advice to one another as to means of combining efficiency with economy.

One strikingly useful outcome of the war has been the increased attention given by gardeners to the augmentation of food supplies, particularly by the autumn sowing of such vegetables as Turnips, Beet, Carrot, Onion, and the like. Thanks to the efforts both of the horticultural Press and of the Royal Horticultural Society a notable increase of foodstuffs has been secured.

We are glad to be able to record that, except for a brief period when the Hall at Vincent Square was in the occupation

of the military, the fortnightly shows of the R.H.S. have been held regularly. It cannot be too strongly urged on those in authority that the continuance of these shows is of the utmost importance to the horticultural trade of the country. That trade has of necessity been affected adversely; but the members of it are a sturdy folk, and in spite of shortage of labour and reduced demands for horticultural commodities, they will be able to "carry on," if they receive the very modest assistance implied in the freedom, for the uses of the Society, of the headquarters of their activity at the Hall at Vincent Square.

The horticultural community, imbued as it is with the conviction that sooner or later the Germans will be expelled from the countries which their armies now occupy, has responded liberally to the appeals issued by the R.H.S. for funds for the restoration of horticulture in the countries of our Allies. Presently a further appeal will doubtless be issued, and we hope and believe that when the time comes it will meet with the most liberal response.

We are proud to be able to record that, in spite of the war, horticulturists who are not wanted for active service have had the fortitude and steadfastness to continue in their several normal pursuits. The steadying effect of this deliberate practice is of the utmost value to the community. The exhibits at Vincent Square have shown that in the art of producing new and improved varieties of plants this country is still pre-eminent, and although no epoch-making advances in scientific horticulture have been recorded during the present year, our pages provide evidence of much patient and profitable labour on the part of the men of science engaged upon scientific problems. How laborious and how exacting in prolonged investigation are these horticultural problems may be judged from the account of the research by Prof. Bateson and Miss Pellew on the nature of rogues in culinary Peas (see *Gardeners' Chronicle*, Sept. 4, 1915, p. 152).

Our readers are aware also, from Mr. Farrer's agile pen, that the work of horticultural exploration is being prosecuted with ardour and success, and they may hope that, if the plants themselves prove as fascinating as the description of them by their discoverer, their gardens in the future time of peace will be of even more varied beauty than they have been in the past.

Death, which concludes our peaceful days no less than those of war, has taken from us during the past year many distinguished men. We have to mourn the loss of Mr. A. Burpee, the distinguished American horticulturist, Dr. J. Nisbet, well known for his contributions to Forestry; Messrs. F. M. Bailey and J. Medley Wood, botanists of high repute; Messrs. E. T. Cook and F. W. Harvey, who rendered conspicuous service to horticultural journalism; Sir J. Church and Dr.

Hugo Müller, both distinguished men of science, and deeply interested in the life of plants; C. F. Ball, of the Royal Botanic Gardens, Glasnevin, who was

killed in action; and Lord Rothschild, whose deep interest in horticulture was known to and appreciated by all gardeners. Lastly, as the year closes, we learn of the death of the Hon. John Boscawen, whose knowledge of plants and love of gardening were without rival among the amateur gardeners of this country.

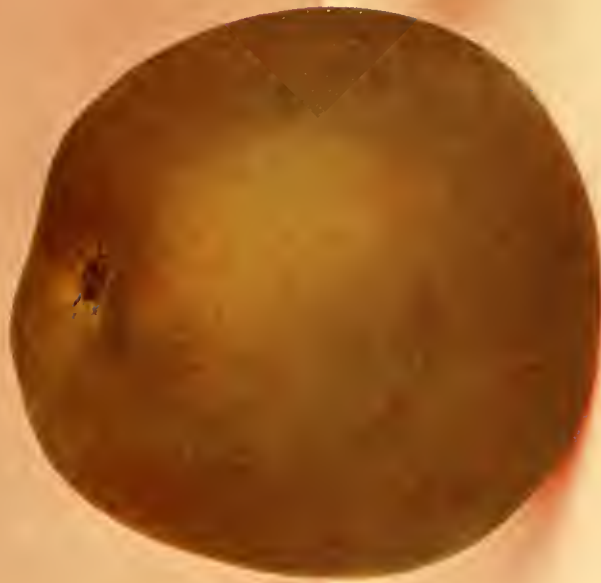
Coloured Plate.—APPLE BEAUTY OF STOKE.—Among the later Apples there are few which keep better than Beauty of Stoke. The flesh is of the Reinette type, becomes mellow when mature, with a pleasant acidity, and the flavour is good in March. The tree is of moderate growth and fertility, and makes a handsome pyramid or bush. It was raised by Mr. DOE, gardener to Lord SAVILE, at Rufford Abbey, and introduced by Messrs. J. VEITCH & SONS some years ago. Though at present but little grown it is well worthy of trial.

GASCOYNE'S SCARLET.—This fruit is perhaps the most beautiful in appearance of all the Apples. No other variety can show so vivid a carmine colour, and a tree laden with fine specimens is a spectacle unequalled in the fruit garden. Raised by Mr. GASCOYNE, of Bapchild Court, Sittingbourne, Kent, it was introduced by Messrs. GEORGE BUNYARD and Co. in 1891. The flavour is of the kind usually called "halsamic," and is also found in such varieties as Transparent de Croucels and Wealthy. The tree is rather particular as to soil, and fails to thrive in some places, one of these being, curiously enough, its original home at Sittingbourne. The merits of this Apple have formed the subject of recent discussion in these pages. Of its decorative value there is no difference of opinion, and visitors to the fruit shows at the Horticultural Hall, Vincent Square, Westminster, know the conspicuous place it always occupies in the collections of pot trees. Given a suitable soil, it is an excellent fruit for a choice market trade, as large, well-coloured specimens fetch a good price when attractively packed.

NATIONAL ROSE SOCIETY.—The annual meeting of the National Rose Society, which was to have been held on Tuesday, December 14, will take place on Tuesday next, the 28th inst., at 2.30 p.m., at the Connaught Rooms, Kingsway, London.

CHARGE FOR ADMISSION TO KEW.—In the *Times'* House of Commons report for the 21st inst. appear the following questions and answers with respect to the proposed charge for admission to Kew:—Mr. ACLAND (Cornwall, Camborne, L.), replying to Mr. WHITEHOUSE (Lanark, Mid, L.), who asked whether a charge for admission to Kew Gardens was now made on each day of the week, and whether he would remit the charge on Saturdays and Sundays in the interests of poor children, said: It is proposed to make a charge for admission into Kew Gardens of one penny on each day of the week except Tuesdays and Fridays, on which, as Students' Days, a charge of sixpence will be made. If the hon. member's suggestion were adopted, the object in view in making the charges, which is national economy, would be to a large extent frustrated because of the high average attendance at the Gardens on Saturdays and Sundays. Answering a supplementary question, Mr. ACLAND said that the object of the charge was to make a little money for the nation.

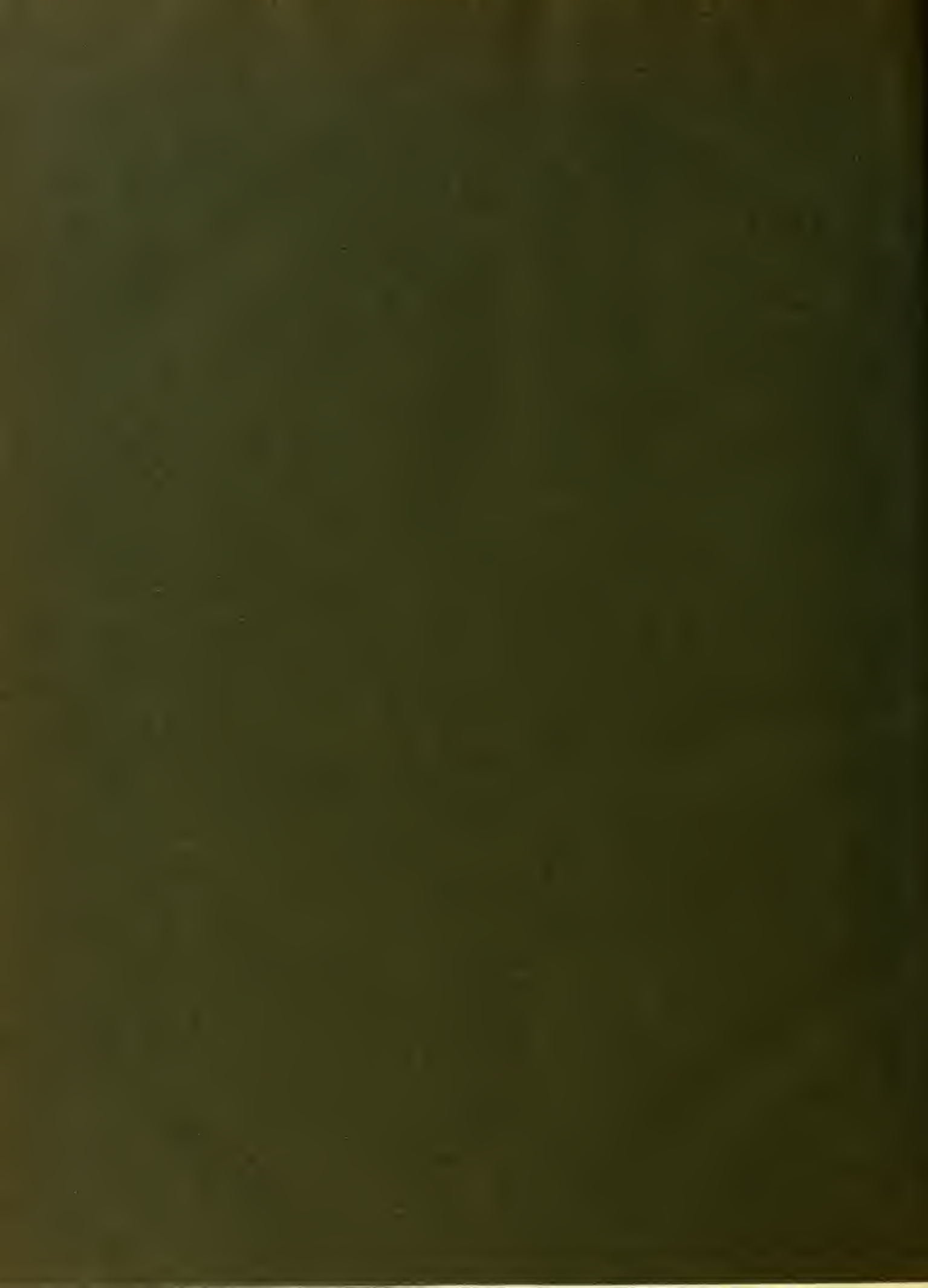
AN ACT OF RESTITUTION.—The enclosed letter which, together with £10 in gold, was received recently by Sir HARRY VEITCH, has been placed in our hands. We publish it in order that the sender may know that the letter and money have been received, and that Sir HARRY—deeply touched by its terms—wishes to congratulate



T. binnus (Hort.)

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him on his manly act of restitution: "Sir,—Once it was in my power to rob, and I took advantage of the opportunity; now it is in my power to make partial restitution, and the enclosed is part of what I can now do. Please forgive me. It is no good my signing this, as you have never heard my name, and would not know it if I signed it. I have asked God to forgive my sin, and He has done so. Please forgive me.—A Regenerate Sinner. 'Once I was blind, but now I see.'"

AGRICULTURAL RELIEF OF ALLIES.—One of the most important contributions to a gift sale at Maidstone on Thursday in aid of the Agricultural Relief of Allies Fund was a large consignment of fruit sent by the salesmen at Covent Garden and the Borough and Spitalfields market salesmen. The fruits were divided into 130 lots, many of which were sold several times over, and in all cases good prices were obtained. A sum of between £2,000 and £3,000 was realised in all by the sale.

HOME-GROWN TIMBER.—The President of the Board of Agriculture has appointed a Committee for the purpose of making arrangements to ensure the fullest use being made of native supplies of timber. The Committee is prepared to purchase standing timber, and will be glad to receive particulars of timber which landowners and others would be willing to sell for Government purposes. All communications for the Committee should be addressed to the Secretary, Home Grown Timber Committee, Craven House, Northumberland Avenue, London.

WAR ITEMS.—Mr. S. MITCHELL, Balcombe House Gardens, Balcombe, Haywards Heath, writes:—"My son, who was educated at a public school (Ardingly College) was a member of the gardening staff of the late Duke of ARGYLL, Inveraray Castle, where he joined the local Territorials, the 1/8 Argyll and Sutherland Highlanders. After three years at Inveraray he was employed at Thornton Castle Gardens, Kincardineshire, and was called up at the outbreak of war. He quickly rose to be sergeant, and after being on active service at the front for eight months has been given a commission in the Regular Army, 11th Argyll and Sutherland Highlanders."

—Mr. HORACE G. HOLMES, chairman of the National Egg Collection for the Wounded, informs us that for some weeks past the number of eggs sent for the wounded soldiers has steadily declined, and last week there were barely sufficient to meet even half the requirements of the base hospitals. He appeals to those unable to send eggs to send money, as the Committee is in a position to purchase new-laid eggs at special rates. Contributors may also "adopt" one wounded man by sending either 1s. in cash or seven new-laid eggs for his one week's use. The War Office (under whose direction this organisation works) has given implicit instructions that the base hospitals are to receive first consideration, these containing the most serious cases. To supply the demands, both at home and abroad, 750,000 eggs were required each week, of which 150,000 are needed for the base hospitals alone.

—MM. VILMORIN-ANDRIEUX ET CIE. send us the following extract from the official journal of the French Republic concerning Mr. LOUIS L. DE VILMORIN, senior midshipman in the French Navy, who has just been appointed Chevalier of the Legion of Honour: "LÉVÊQUE DE VILMORIN (H.L.), Enseigne de Vaisseau de Réserve: An officer who has repeatedly and most particularly drawn the attention of his superiors and has highly contributed to the success of military operations." M. LOUIS L. DE VILMORIN has, since the beginning of the war, commanded a section of auto-guns, and was awarded the War Cross (Croix de Guerre) in December, 1914. He

is the third of the five VILMORIN brothers now serving in the French Army.

THE MANGO IN QUEENSLAND.—The Mango is grown largely throughout the eastern seaboard of Queensland, wherever the district is free from frost. It has been called the Apple of Queensland, as it stands as much neglect, and can be grown with as little care and attention as, or even less than, that given to the Apple in many of the Somerset or Devonshire orchards. Droughts and floods have little effect on it; it grows in any soil, from sand to heavy loam, amongst rocks, or on a gravelly or shaley land. Naturally, it does best in good land, but hundreds of trees are doing well and bearing heavily on land that is by no means fruit land. The Mango is one of the handsomest fruit trees of Queensland, the symmetry of its growth, its large glossy leaves, the delicate colouring of its young growth, which is of different shades in different varieties, the abundance of fruit that it produces, varying in colour from dull-green to yellow, red, or even purplish tints, all render it conspicuous. In most cases it is propagated from seed, the stones of fruit showing especial merit being planted either in a nursery or, better still, where the

tree is to remain permanently, as it usually does better when not transplanted. It is not at all uncommon to find a Mango tree growing wild in full bearing and in vigorous health, the result of a stone that has been thrown away by someone who has eaten the fruit. In addition to its value as a fruit, the Mango forms a handsome ornamental tree, and one that provides a good shade for stock.

SULPHURIC ACID AND FERTILISERS.—The farming community is apprehensive lest the supply of superphosphate should prove inadequate. It appears that the manufacturers of this phosphatic manure are having considerable difficulty in procuring sufficient quantities of sulphuric acid—one of the raw materials employed in its manufacture. This difficulty is attributed to the demand for the acid in munition works, and to the lack of transport facilities.

ORCHID NOTES AND CLEANINGS.

HYBRID ORCHIDS.

(Continued from p. 330.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Cattleya Apollo	B.-C. Digbyano-Mossiae x C. Mendelii	Armstrong and Brown.
Brasso-Cattleya Diana	B.-C. Orpheus x C. Dowiana aurea	Monsieur Maron.
Brasso-Cattleya La Marine	B.-C. Bayard x C. Mendelii	Monsieur Maron.
Brasso-Cattleya Merlun	B.-C. Digbyano-Schröderae x C. labiata	Flory and Black.
Brasso-Cattleya Souvenir de Pégoud (Bri-nette)	B.-C. Marguerite Fournier x C. Pittiaoa	Monsieur Maroz.
Cattleya Bourdassii	Germania x Hardyana	H. S. Goodson, Esq.
Cattleya Evelyn Sander	Düsseldorferi Undine x Trianae alba	Sander and Sons.
Cattleya Furleyana	Harrisoniana x Rhoda	C. J. Phillips, Esq.
Cattleya Hecate	Walkeriana x labiata	W. H. St. Quintin, Esq.
Cattleya Illustris	Acis x indescens	Armstrong and Brown.
Cattleya Lord Derby	labiata x Percivaliana	H. Dixon.
Cattleya Mary Sander	Suzanne Hye de Crom x Düsseldorferi Undine	Sander and Sons.
Cattleya Penock	Hardyana x fulvescens	Sander and Sons.
Cattleya Portiata	Portia x labiata	F. J. Hanbury, Esq.
Cattleya Snow Queen	Gaskelliana alba x Suzanne Hye de Crom	Sander and Sons.
Cattleya Solfaurea	Solfaterre x Dowiana aurea	Monsieur Maron.
Cattleya Solfaterre (Loubetii)	Dowiana aurea x fulvescens	Monsieur Maron.
Cymbidium albanense	erythrostylum x insigne Sanderi	Sander and Sons.
Cymbidium Albatross	Gottianum x grandiflorum	Sander and Sons.
Cypripedium Alcione	Hera x Smithii	Charlesworth and Co.
Cypripedium Antiope	Troilus x Hitchinsiae	Armstrong and Brown.
Cypripedium Dupreanum	Troilus x fulshawense	Armstrong and Brown.
Cypripedium Edgar	Hera x G. F. Moore	H. T. Pitt, Esq.
Cypripedium Elaine	insigne Sanderæ x nitens Lceanum	H. T. Pitt, Esq.
Cypripedium elatum	Ruby Gem x insigne Harefield Hall	Armstrong and Brown.
Cypripedium Eric	Cypri x Faircannum	H. T. Pitt, Esq.
Cypripedium Isonso	Alcibiada x Mrs. Wm. Mostyn	Charlesworth and Co.
Cypripedium Leonard	glaucochrysum x nitens	H. T. Pitt, Esq.
Cypripedium Lucilia	allertonsense x Memnon	Charlesworth and Co.
Cypripedium nicans	Clio x Mrs. Wm. Mostyn	Armstrong and Brown.
Cypripedium Mrs. Rickards	Earl of Tankerville x ?	R. W. Rickards, Esq.
Cypripedium Queen Elizabeth	Conspicuum var. Prewetti x Gaston Bultel	Armstrong and Brown.
Cypripedium Radinsball	insigne Harefield Hall x Memnon	P. Smith, Esq.
Cypripedium The Duchess var. Marica	aureum Surprise x insigne Sanderæ	Charlesworth and Co.
Laelio-Cattleya Adolphaurea	L.-C. Adolphus x C. Dowiana aurea	F. J. Hanbury, Esq.
Laelio-Cattleya Alex	L.-C. Tunis x C. Dowiana aurea	S. Low and Co.
Laelio-Cattleya Anzac	Clive x blancheyensis	Lady Lawrence.
Laelio-Cattleya Athene	Callistoglossa x St. Gotthard	J. Gurney Fowler, Esq.
Laelio-Cattleya Corona	C. Bowringiana x L. Perrini	H. T. Pitt, Esq.
Laelio-Cattleya Golden Wings	C. fulvescens x L.-C. Ophir	Sir Geo. L. Holford.
Laelio-Cattleya Joan	C. Fabia x L.-C. Corone	Hassall and Co.
Laelio-Cattleya Moonbeam	C. Schröderae x L.-C. G. S. Ball	Sander and Sons.
Laelio-Cattleya Mrs. Geoffrey Taite	Orion x Golden Oriole	Mrs. R. Le Doux.
Laelio-Cattleya Salonica	L.-C. Fascinator x C. Warszewiczii Fr. M. Beyrodt	Charlesworth and Co.
Laelio-Cattleya St. Alban	L.-C. Golden Glory x C. Dowiana aurea	Sander and Sons.
Laelio-Cattleya Thais	L.-C. Faustina x C. Dowiana aurea	W. H. St. Quintin, Esq.
Odontioda Aphrodite	Oda. Diana x Odm. eximium	Charlesworth and Co.
Odontioda Armstrongiae	Oda. Bradshawiae x Odm. Armstrongiae	Armstrong and Brown.
Odontioda Leopardina	Oda. becheosis x Odm. Vuylstekei	R. Ashworth, Esq.
Odontioda Nena	Oda. Vuylstekeae x Odm. perculum	Flory and Black.
Odontoglossum Chloe	crispum x Groganiae	R. G. Thwaites, Esq.
Odontoglossum Clio	crispum x Harlequin	Armstrong and Brown.
Odontoglossum Peerless	Ossulstouli x eximium	Armstrong and Brown.
Odontoglossum Philo	excellens x eximium	Armstrong and Brown.
Soliro-Cattleya Maude	S. grandiflora x C. Maggie Raphael	Sander and Sons.
Soliro-Cattleya Salonica	S.-C. Warnhamensis x C. Fabia	Armstrong and Brown.
Soliro-Laelio-Cattleya ashheadensis	S.-L.-C. pumeximia x C. Bowringiana	Pantia Ralli, Esq.
Soliro-Laelio-Cattleya Orion	S.-L.-C. Menippe x C. Fabia	Charlesworth and Co.
Brasso-Laelia Gemma	L. Enterpe x B.-L. Mrs. M. Gratrix	
Calanthe Gattou Alpha	vestita luteo oculata x Wm. Murray	
Cattleya Beryl	Wendlandii x Hardyana	
Cattleya Gattou Ruby	amabilis x Hardyana	
Cattleya intermedia-gigas	Warszewiczii x intermedia	
Coelogyne gattouensis	speciosa x Sanderæ	
Epidendrum Gattou Pride	Bonidii x cochleatum	
Laelia Jongheanceps	Jongheana x anceps Dawsoni	
Laelia Cattleya Ewingiana	C. Bowringiana x Ewingiana	
Laelio-Cattleya Gattou Gold	C. Percivaliana x L.-C. Charlesworthii	
Laelio-Cattleya Gattou Princess	C. Mantioii x L. pumila	
Laelio-Cattleya Perfect	C. Leopoldii x L. cinnabrosa	
Laelio-Cattleya Pygmalion	C. granulosa x L. pumila	
Laelio-Cattleya Quebec	C. velutina x L.-C. blancheyensis	
Laelio-Cattleya Toronto	C. Harrisoniana x L. cinnabrosa	
Laelio-Cattleya Vancouver	C. Schröderae x L.-C. Cappei	
Laelio-Cattleya xanthina	L.-C. Phryne x L. tenebrosa Walton Grange	
Sobralia Gattou Lily	Lucasiana x Holfordii	
Soliro-Laelio-Cattleya Gattou Glory	S. grandiflora x L.-C. Charlesworthii	

These hybrids, some of which have been noted in the *Gardeners' Chronicle*, but not included in the list, have been raised in the collection of Sir Jeremiah Colman, Bart., Gattou Park, Surrey (gr. Mr. Collier).

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE (LIX).

LES TOMATES ANGLAISES.

Nous avons déjà donné quelques renseignements sur la production des Pommes d'amour dans les environs de Londres. L'importance de cette culture est cependant telle que nous croyons devoir lui consacrer quelques lignes supplémentaires d'autant plus que Londres constituera toujours un débouché pour la Tomate du continent à condition qu'on y tienne compte des exigences particulières de la clientèle.

Les nombreuses variétés jaunes répandues dans les collections, sont inconnues dans les cultures commerciales, le marché demandant une Tomate rouge et bien régulière, d'un volume suffisant sans être exagéré. Hormis la couleur, ces qualités font défaut à la Tomate belge qu'à certains moments on a voulu écouler à Londres, et c'est peut-être la raison de l'insuccès de la tentative faite pour placer en Angleterre un produit pour lequel les cours y sont plus favorables qu'en Allemagne, débouché normal pour l'excès de la récolte belge.

Il est à remarquer en effet que l'Allemagne s'accommode des Tomates énormes et plus ou moins irrégulières, des forceries belges. Lorsque ce marché est accessible, les rendements élevés de certaines variétés, même quand elles sont cultivées avec peu de soins, compensent amplement la légère baisse dans le prix. Quoi qu'il en soit, si la production belge désire avoir des rapports plus suivis avec le marché de Londres, après la guerre, il sera indispensable que, de même qu'en Hollande, on prenne des variétés qui se rapprochent davantage du type demandé. On leur reproche, il est vrai, que, cultivées dans un milieu peu nutritif, elles donnent trop de fruits de dimensions minimes qui ne sont recherchés sur aucun marché et qu'elles y produisent des récoltes insignifiantes en poids. Toutefois, un effort visible avait été fait en vue d'étendre la culture des variétés lisses donnant les fruits les plus gros, et sans aucun doute quelques autres cultivées actuellement en Angleterre ont leur place marquée dans les serres belges.

Très répandues aux environs de Londres sont les Comet, Fill Basket, Kondine, Sunrise, Water Baby, Ailsa Craig, etc., les unes se recommandant par l'abondance de leurs fruits, les autres par leur volume. La plupart des producteurs ont une collection de variétés, et leur opinion quant à la valeur de celles-ci est souvent contradictoire, la nature du sol paraissant expliquer des résultats très variables. De plus, les variétés s'altèrent très rapidement sous l'influence de la culture, à tel point qu'une nouveauté qui fait son chemin donne bientôt des sous-variétés présentées comme des améliorations. La spéculation cependant n'y est pas toujours étrangère.

Comet, la Tomate la plus répandue il y a quelques années grâce aux dimensions et à la régularité de son fruit, fait actuellement place à des variétés plus récentes, telles que Ailsa Craig et Kondine. L'une et l'autre sont de forme irréprochable. La première se recommande surtout pour sa rusticité, ses rendements étant généralement excellents en terrain assez pauvre. On lui reproche la hauteur à laquelle apparaît la première fleur, ce qui la rend moins avantageuse quand on se trouve obligé d'arrêter rapidement le développement des tiges. Kondine est une variété très généreuse donnant énormément de fruits près de terre, d'où ses exigences en ce qui concerne la nature du terrain. Elle convient davantage aussi là où on pince relativement tôt, comme c'est le cas en Belgique, et

nous croyons qu'elle mérite d'y être introduite mieux que les autres, à moins qu'on ne change les procédés de culture.

COMMERCE HORTICOLE BELGE.

Pendant le mois d'octobre, la Belgique occupée a fait quelques exportations de produits horticoles vers des pays neutres. On relève 4,900 kilos de bulbes, 1,400 kilos de fleurs et feuilles coupées, 1,733,900 kilos de plantes vivantes, 262,400 kilos de Pommes, 51,100 kilos de Poires, et 3,500 kilos de Carottes. Pendant la même époque la Hollande n'a fourni à la Belgique que 2,700 kilos de plantes vivantes : on peut en tirer une conclusion peu encourageante en ce qui concerne la situation des horticulteurs belges : on semble réaliser les stocks sans pouvoir s'occuper de l'avenir des cultures. Les exportations de Pommes et de Poires sont largement compensées par les achats en Hollande qui s'élèvent respectivement à 431,700 et 76,000 kilos. Ce pays a encore contribué à l'alimentation de la Belgique en lui envoyant 2,328,900 kilos de Choux cabus, 14,600 kilos de Choux-fleurs, 420,300 kilos d'Oignons et d'Echalotes, 1,097,700 kilos de Carottes ! Tout n'est donc pas rose en Belgique !

Les exportations de Chicorée de Bruxelles que les Allemands avaient autorisées pendant quelques jours en novembre, sont de nouveau prohibées, provisoirement, dit-on. On ignore la raison de cette nouvelle mesure.

NOUVELLES DIVERSES.

NOUVELLES DE LA GUERRE.—Nous avons annoncé dans un de nos derniers numéros (v. p. 361) que le fils de M. A. Nonin figurait parmi les blessés. Il s'agit de M. Henri Nonin, qui fut déjà blessé au début de la guerre. Il avait été promu sous-lieutenant au 164^e d'infanterie. La blessure qu'il a reçue au bras droit ne lui permettra pas de reprendre son service avant dix-huit mois. M. Nonin est soigné à l'hôpital de Lyon où il a été décoré de la Légion d'Honneur et de la Croix de Guerre.

LES MUGUETS.—Pour s'affranchir de la tutelle de l'Allemagne en ce qui concerne l'approvisionnement des Muguets, un horticulteur français vient de consacrer plusieurs hectares à la production des griffes qui seront conservées dans un grand entrepôt frigorifique. Cette initiative pourra sans doute être secondée par la commission technique des applications du froid à la conservation des produits agricoles, que le Ministre de l'Agriculture a chargée d'étudier la question.

À Londres, le Muguet a toujours été très populaire, surtout à l'époque de Noël. L'absence de griffes allemandes avait récemment amené les prix à des niveaux élevés. Actuellement les envois de fleurs sont plus abondants et les cours redeviennent normaux.

La Hollande offre des griffes qui sont garanties d'origine non allemande. L'administration de la Donane est très difficile pour les importations et ne délivre la marchandise que quand la preuve absolue de l'origine a été fournie. Cela entraîne souvent des retards et plusieurs envois se sont déjà gâtés avant que les formalités requises eussent été remplies.

LES POMMES À CIDRE EN FRANCE.—Les wagons pour transport manquant toujours, les demandes sont actives, mais l'impossibilité de livrer fait que le disponible est recherché à des

cours fermes. On a vendu de la Seine-Inférieure de 30 à 32.

LES POMMES DE TERRE.—On se plaint également de la pénurie des wagons, qui retarde les livraisons, réduit l'importance des stocks et facilite la hausse des cours. On cote : Hollande royale, 190 à 200 ; Hollande ordinaire, 175 à 185 ; Saucisse rouge du Gâtinais, 175 à 185 ; Saucisse grise, 160 à 170 ; Early Rose, 130 à 140 ; ronde jaune, 135 à 145 ; Industrie, 140. Le tout aux mille kilos, sur wagons complets de 10 tonnes, gares départ.

LES LÉGUMES SECS.—On cote, rendus Paris : Flageolets blancs, 86 à 88 ; Haricots lingots, 92 à 95 ; Chevrillers verts, 96 à 98 ; Suisses blancs, 91 à 93 ; Suisses rouges, 83 à 85 ; Chartres, 81 à 83 ; Pois cassés du Nord, 138 à 160 ; Pois cassés étrangers, 105 à 125 ; Lentilles indigènes, 140 à 150 ; Lentilles des Indes, 80 à 84, les 100 kilos.

LA QUESTION DES BULBES.—À propos de la lutte entre bulbes de Grande Bretagne et de Hollande, on a fait valoir que ces derniers sont à des prix trop bas pour que la concurrence soit possible. Suivant des spécialistes anglais, leur valeur de culture serait inférieure en moyenne de 10 pour cent à celle des bulbes produits dans les Iles Britanniques.

LES CHOUX EN ALLEMAGNE.—On annonce que désireux de parer à la cherté des vivres, le gouvernement allemand continue à fixer des prix maxima. Pour certains légumes les cours devaient être respectables car on signale que le prix maximum des Choux cabus n'atteint que le quart de ce qu'il était auparavant.

LES POMMES DE TERRE EN GRANDE BRETAGNE.—Il est connu que les Pommes de terre de semence employées en Grande Bretagne sont surtout fournies par l'Ecosse. Ces tubercules donnent des résultats meilleurs que tous autres, bien que, comme ailleurs, l'expérience ait prouvé que tout renouvellement de "Semence" soit avantageux. Actuellement la culture écossaise offre ses plants à 70-100 shillings la tonne suivant variétés.

KORT OVERZICHT VOOR DE VLAMINGEN.

TOMATEN worden op zeer groote schaal gekweekt in Engeland. Toch is er nog plaats voor een grooten invoer van het Vasteland.

Uit België werden soms proeizendingen gedaan, maar deze lukten niet, waarschijnlijk omdat ze veelal dikke onregelmatige vruchten bevatten die op de Engelsche markt niet gevraagd worden. Men geeft er de voorkeur aan gave, ronde Tomaten.

Wellicht is er na den oorlog plaats in de Belgische bedrijven voor zulke verscheidenheden als Comet, Kondine en Ailsa Craig.

Plantaardappelen in Engeland gebruikt komen veel uit 't Noorden en vooral van Schotland. Men heeft hier ook ondervonden dat zaadverandering doorgaans een gunstigen invloed op den oogst heeft.

In Frankrijk en Engeland zorgt men meer en meer de Duitsche meibloemen buiten te houden. Men is zeer streng voor de oorsprongsbewijzen van deze die uit Holland aangevoerd worden.

Het moet slap gaan in België daar er zooveel groenten uit Holland hengevoerd worden. Planten worden nog al verkocht en schier geene gekocht, wat laat veronderstellen dat men weinig voor de toekomst kan zorgen.



THE ORCHID HOUSES.

By T. W. BRISCOM, Gardener to W. R. LYSAGHT, Esq.,
Castleford, Chepstow, Gloucestershire.

ZYGOPETALUM.—The most popular of these Orchids is the handsome *Z. Mackayi*, which flowers in winter. It is a robust plant, and requires generous treatment to bring out its best qualities. Being a deep-rooting species, pots of ample size are necessary. The compost should consist of good fibrous loam mixed with a little *Osmunda-fibre*: a sprinkling of finely-broken crocks may be added, and each pot should be filled to one-fourth of its depth with material for drainage. *Zygopetalums* may be repotted a week or so after the flower-spikes are cut, and, for a time, water must be applied sparingly. When the plants are growing actively, the roots require copious supplies of moisture, but when the pseudo-bulbs are fully developed a little moisture will suffice to keep them in healthy condition. A house having an intermediate temperature or the cooler end of the *Cattleya* house will suit the requirements of this species. Others needing much the same treatment are *Z. crinitum*, *Z. Ballii*, *Z. Sedenii*, *Z. intermedium*, *Z. brachypetalum* and *Z. Burkei*. *Z. maxillare* and *Z. Gauthieri* belong to a group the members of which have the pseudo-bulbs at intervals on a creeping rhizome, and for this reason ordinary pot cultivation is not suitable. In their native habitats these species grow on the stems of Tree Ferns, and the best results are obtained in this country by placing the plants on a piece of Tree Fern stem with one end in a pot, or the Fern stem may be suspended from the roof-rafters by means of wire. The roots need but very little soil, and in view of this extra care must be taken to prevent the plants from becoming dry. They should be sprayed over each day, and in summer several times daily. They need shading from strong sunlight; therefore they should be grown in the shadiest position in the intermediate house. Thrips are often troublesome, especially when the leaves begin to unfold, and to keep the pests in check it will be necessary to vaporise the house on frequent occasions.

THE HARDY FRUIT GARDEN.

By W. HADLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

HARDY FRUITS IN 1915: A RETROSPECT.—The ground is very wet and in an unworkable condition. The Strawberry crop was almost a failure, due to a deficiency of rain in June. Raspberries, however, were fairly good, both in quality and quantity. In this neighbourhood, which is famous for its Plums, Prunes and Damsons, Victoria Plums were the only trees that carried good crops of fruit. Greengages and Damsons were very light crops, but Prunes were plentiful, and the fruits were of good quality. Gooseberries and Currants of all kinds were seriously damaged by spring frosts, and the bushes in consequence carried very light crops. The following varieties of Apples cropped best, although much of the fruit was under size:—Blenheim Pippin, King of the Pippins, Cox's Orange Pippin, London Pippin, Worcester Pearmain, Allington Pippin, Lane's Prince Albert, Ecklinville Seedling, Lord Grosvenor, Hoary Morning and Peasgood's Nonesuch. Most varieties of Pears fruited sparsely and the fruits were below the usual quality. The wood of all kinds of fruit trees appears to be well ripened and the trees give promise of good crops next season.

GENERAL REMARKS.—Wherever alterations are in progress—in the park, roadsides, or elsewhere—suitable materials are often to be found that prove useful for fruit-tree borders, or by mixing with manure or other materials, to improve the texture of the soil. Such composts often require several months' preparation and must be turned frequently. All prunings and

odds and ends of rubbish that may have accumulated beneath the trees should be raked together in small heaps, burnt, and the ashes scattered over the surface. During calm weather the trees may be sprayed with a suitable insecticide for the destruction of scale and other pests. For grafting purposes later, select suitable, well-ripened shoots, label, and lay them in the soil of a north border. Examine the trees for American blight and paint the affected parts with a strong solution of Gishurst compound or methylated spirits. Clear away the soil from near the stems of the trees, as these troublesome insects hibernate there during the winter. Relabel all trees of which the names are becoming obliterated or the labels showing signs of decay. Young trees that cropped heavily during the past season should be mulched with manure. If the soil is of a poor nature, remove some from the surface and replace it with rich loam, to which a sprinkling of bone-meal has been added. Young trees that have made vigorous growths during the past season should be root-pruned during open weather. Remove suckers from the base of Nut trees, and thin the branches where required. Afterwards lightly fork the surface of the ground and apply a mulch of farmyard manure. Standard or other trees that were grafted last spring should be headed back to encourage suitable growths to develop next season for extension. Apply a liberal dressing of manure to the surface of Raspberry plantations, after the canes have been tied and the ground cleared of weeds.

THE KITCHEN GARDEN.

By JOHN DUNN, Foreman, Royal Gardens, Windsor.

THE VEGETABLE CROPS IN 1915.—Certain of the crops did exceedingly well, whilst others were not so successful as usual. Beet suffered seriously from attacks of Black Fly, which infested the seedlings as soon as they were through the surface. Various specifics were tried, but the first sowing was of little value, and another of Turnip-rooted varieties was made in July. The supplementary crop was satisfactory, and produced a sufficient number of good roots to last until June. Early-sown Carrots were affected in the same way, but as these are sown at frequent intervals little inconvenience was caused. From sowings made in June and July we have plenty of good roots to last the season through. For this sowing the varieties Model and Monument are to be recommended, as the roots retain their colour well and are left in the beds throughout the winter. The Celery crop is not up to the usual standard, due, in my opinion, to excessive rainfall in July, when the trenches were flooded on several occasions, making the soil cold and stagnant, so that the plants were late in making satisfactory growth. The rainfall for July at Windsor was 5.53 inches, compared with 1.90 inch the previous July, or an average of 2.15 inches for the past ten years. Although Celery is regarded as a water-loving plant, stagnant moisture is very detrimental to it. Cauliflower raised in the autumn and wintered in pots were excellent, but the first spring-raised plants were not so satisfactory. Later plantations, however, succeeded well, and especially Halloween Giant, from which we have had a supply of pure white curds throughout November. Autumn Protecting Broccoli is also very good, and Early Market Broccoli is just turning in, so that with a little protection in frosty weather a supply will be available for some time to come. The Lettuce crop succeeded well, and we have still an ample supply of good heads from the open borders, which have been protected from frost by blinds. These Lettuces will continue in good condition for some time to come, provided the weather is favourable. The varieties are Dickson's Monument and Maximum. Onions have done exceedingly well and we have harvested more than eight tons of good, sound bulbs, which are keeping well, and from which we have supplied more than ten hundredweight during November to the royal household. The varieties grown are Brown Globe, Wroton Globe and Giant Zittau, which is a good keeper. The moist autumn suited Parsley, which has become somewhat overgrown and will require

protection from severe frost. Peas have done well, and the plants produced an unbroken supply of pods from May 24 to October 26. The earliest sowing was made in the beginning of January on a south border and the latest on June 11 in the open garden on ground which had been deeply trenched. The varieties grown were The Pilot, Gradus, Dickson's Discovery, Manifold, Royal Salute, Distinction, Gladstone, Rear-guard and Autocrat, all of which are of good quality and constitution. The Potato crop was lighter than in 1914, but the tubers were free from disease. Our best variety, both for quantity and quality, this season was Vere O'Brien. This is a good main crop Potato, well suited for either farm or garden. Sharp's Express and May Queen produced full crops of tubers early in the season, and both are of good quality. Green vegetables of all kinds are plentiful. Christmas Drumhead Cabbage and Copenhagen Market are in good condition now. Also Coleworts and Savoys, which are somewhat later than usual, although sown at the usual time. Tomatoes in the open were a very light crop, due to the excessive rains in July. Vegetable Marrows were also scarce for the same reason.

THE FLOWER GARDEN.

By A. J. COBB, Gardener to REGINALD CORY, Esq.,
Duftryn Gardens, near Cardiff, South Wales.

WINTER EFFECTS.—The true garden lover sees much beauty in the winter effects of certain trees and shrubs, and notes should be made now of the most striking subjects. Some plants have beautifully-coloured bark, some showy fruits, whilst others are admired for their graceful contour. Certain trees and shrubs are attractive at all seasons, including Conifers, Eleagnus, Bamboos, and Tree Ivies.

WINTER-FLOWERING SHRUBS.—Few subjects are more beautiful in winter than masses of Heaths in flower. *Erica mediterranea hybrida* is covered with delicate, mauve-coloured blooms, and will continue in flower for a long time. This Heath grows more vigorously and flowers rather earlier than *E. carnea*, which has reddish-pink bells. The taller, *E. codonodes*, is opening to white blooms; *E. australis* will follow with masses of pink blossoms. A warm winter effect is produced by the brown colouring of the old blooms of *E. vagans*, and for this reason the dead spikes should not be removed. As *Ericas* are quite hardy, easily cultivated and lend themselves for diverse positions, they should be planted freely. The ground may be prepared for planting these subjects in February or March. Ordinary soil of the garden, enriched with manure, is suitable, but lime must be absent. The species of *Hamamelis* (*Witch Hazels*) commence blooming early in January, whilst the flower-buds on bushes of *Viburnum Tinus* (*Laurustinus*) are fast expanding. The sweetly-scented *Daphne Mezereum* and its varieties *flore-albo* and *atro-rubrum* rarely fail to bloom freely, and will soon be in full flower. *Lonicera Standishii*, the Chinese Honeysuckle, is sprinkled with fragrant white blooms. Of climbers in flower, mention may be made of the Yellow Jessamine, *Chinouanthus fragrans* and *Garrya elliptica*.

COLOURED BARK.—The red and yellow stems of *Salix Willows* and *Cornus* (*Dogwood*) are very beautiful, especially on the young wood of plants that were pruned to the ground-level last spring. Effective green colouring is found on the stems of the members of *Cytisus* and *Genista* families, also of *Lycasteria formosa*. The culms of many Bamboos are beautifully coloured, which render the plants additionally attractive. Among white-stemmed subjects, *Rubus lasiostylus* and *R. biflorus* are prominent. The old shoots should be removed as the young growths start to develop, and the best colouring is on plants growing in rich soil. The Common Birch is graceful and attractive with its silvery trunk. *Acer Davidii* and *A. pennsylvanicum* have striated white stems. A variety of the latter, *erythrocladum*, has a particularly beautiful scarlet bark. Rich brown tones in various shades are produced by the early-flowering shrubs—*Stephanandra*, *Lemoine's Philadelphus*, *Deutzia*, *Spiraea* and *Ribes*.

FRUITS UNDER GLASS.

By JOHN HIGHGATE, Gardener to the Marquis of LINLITHGOW, Hopetoun, South Queensferry, N.B.

LATE PEACH HOUSES.—In order that the trees may be rested completely, open the ventilators in late Peach houses to their fullest extent, but not when there is danger of frost cracking the hot-water pipes. Push forward the work of pruning the trees and clearing the houses, so that it may be completed as soon as possible, for there is always a danger of injuring the buds if this work is deferred until the turn of the year. If it is intended to make alterations to the borders, do not delay the work much longer, but young trees may be planted almost up to the end of February. In top-dressing the borders in these late houses remove the soil to the depth of two inches or so, and replace it with good loam, mixed with a moderate sprinkling of steamed bone-meal. Wood ashes are usually plentiful at this season and are excellent for top-dressing all kinds of stove fruits, as they contain a large quantity of potash. Lime-wash the walls and paint the hot-water pipes with a mixture of lampblack and boiled linseed oil.

MELONS.—Those having suitable pits with a good command of heat may reasonably make a start with Melons by making a small sowing. Select varieties that can be relied on to set their fruits freely, and preferably those that yield small or medium-sized fruit, such as Hero of Lockinge. To be successful with these early plants they must be kept growing steadily from the start, as they seldom recover from the effects of a check. Sow the seed singly in small pots filled with soil of rather a light texture and plunge the pots in a case where a brisk bottom-heat can be maintained. All through the earlier stages of growth be sparing with water and grow the plants in plenty of light. The bed for planting should be made with good fresh loam that has been for some little time under cover. When the soil is warmed through the Melons may be planted. Early Melons may be grown in 12-inch pots; indeed, it is a debatable point as to whether pot cultivation is not the most suitable for early Melons.

PLANTS UNDER GLASS.

By F. JORDAN, Gardener to Lady NUNBURNHOLME, Warter Priory, Yorkshire.

HUMEA ELEGANS.—Grow this plant in a dry cool atmosphere, so as to minimise the danger of the foliage dropping. Water the roots with extreme care during the next few weeks, and do not let the foliage get damp. Unless repotting is absolutely necessary, do not disturb the roots for a few weeks.

PLANTS IN FRAMES.—Repot *Antirrhinums*, *Schizanthus*, *Larkspurs*, *Clarkias* and similar plants as becomes necessary, and guard against injury by damping; unless the frames are well furnished with hot-water pipes to counteract an excess of moisture, there will be as much danger from this as from frost. Although the plants will not need much moisture at the roots, they should be examined frequently to see if they need watering. Remove decaying foliage, as decay soon spreads. Fire-heat will be necessary in times of severe frosts; but in mild weather the plants should be kept as hardy as possible by ventilating freely on all favourable occasions.

HIPPEASTRUM.—If *Hippeastrums* (*Amaryllis*), are required in flower early, suitable plants should be selected for forcing. The best for the purpose are those that do not require potting, or that have been prepared in previous seasons, and in consequence finished their growth early. If the plants are plunged in a bottom heat of 70°, the extra warmth at the roots will be an advantage. *Hippeastrum* bulbs prepared and treated in this way generally produce their foliage at the same time as the flowers.

THE CONSERVATORY.—Have the conservatory bright with flowers for the Christmas season. Arrange the plants in groups of one colour, as there are plenty to select from, and endeavour always to have something new and attractive either in the arrangement or variety. Pay special attention to removing dead leaves, and in short respects keep the house neat and tidy.

HOME CORRESPONDENCE.

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

ASPERULA NITIDA.—It may interest your botanical and horticultural readers to know that I was the first to discover *Asperula nitida* growing wild in the British Isles, in August, 1913. This species is a known native of the high mountains of Asia Minor and Greece, and has for several years been in cultivation in English gardens. I found it near the summit of Ben Nevis, growing close to the verge where all general vegetation gives way to a chaos of bare rocks (volcanic scree). It was growing wild, beyond all questioning, on the mountain, about four miles up, well off the beaten track, amongst loose stones, *Saxifraga hypnoides*, Moss and sparse grass. There was only a small patch of the plant, but I carefully removed a piece large enough to fill the palm of my hand, and, having a vasculum with me, was able to keep it fresh through a many-houred climb in intense heat, and also to get it back to England two days later in a fresh condition. It was then put into a thumb-pot, which was sunk in the ground till

are more or less stiff and retentive as at Aldenham, with which I happen to be familiar. I consider the Apple in question, when on a good stock, sufficiently immune from canker to warrant a place amongst the reliable varieties. With regard to pruning, I do not advocate any one method. I always prune either hard, medium, or light, according to the condition and strength of the trees; but I do advocate hard pruning until the trees are five or six years old, to get them into shape and strengthen the young branches. If my trees make strong wood, they are root-pruned, after which the branches get very little, if any, pruning beyond what is necessary to prevent over-crowding occasionally. The laterals, when long, are lightly summer-pruned. Trees under this treatment give every satisfaction, and rarely make superfluous growth afterwards. The best crops of this Apple which I have seen during the past and other seasons were from trees which had not been pruned in any way for several years past and have carried heavy crops regularly since pruning was discontinued, the outer branches being weighed to the ground with Apples. As this variety bears its



FIG. 141.—MR. REGINALD FARRER'S EXPLORATIONS: *STELLERA* SP. GROWING ON THE LOESS.

(See p. 390.)

the following March, when the plant was put into the open ground on a sunny slope of my rock-garden facing S.E., and well surrounded with loose stones. In June it began to grow, and sent up sprays of shell-pink, tiny four-petalled blossoms on stems about 1 inch high. During the winter the leaves of the plant turn slightly brown, but by February they resume their greenness, and the clump of dense, dwarf, thread-like leaves becomes very beautiful. *K. E. Styan, Ben Craig, Sevenoaks, Kent.*

APPLE GASCOYNE'S SCARLET (see Supplementary Illustration and p. 392).—Having a very wide experience of this Apple grown under all sorts of conditions, and in light and heavy, wet and dry soils, both throughout this county and in several localities in the Suir Valley district, Co. Kilkenny, I am convinced that it is one of those varieties to which a hard-and-fast rule cannot be applied regarding its treatment, and this has been more or less proved by the conflicting correspondence already published. I agree with Mr. Beckett with regard to surface planting, and if this were more freely practised and more attention given to selecting suitable stocks we should hear less of canker, even in soils that

fruit chiefly on laterals and long, slender spurs, the former should not be shortened too much. I find the variety does equally well worked on the Crab or Paradise stock, but I prefer the latter. *E. H. Bowers, Instructor in Horticulture, County Buildings, Roscommon, Ireland.*

COB-NUT PROSPECTS.—The paucity of male catkins, which *A Southern Grower* laments in his informative remarks on p. 357, need not necessarily result in an "under" crop of Cob-nuts. The presence of the female flowers is, however, all important. Given these, it should be comparatively easy, in most country districts, to cut branches of Hazel, which always bear abundant catkins, just before the pollen is released, and tie them to the bushes of cultivated Nuts. My experience with Filberts is that it is almost impossible to get a full crop by trusting to their own pollen, but when branches of Hazel with male catkins are introduced amongst the bushes I find no difficulty. Curiously enough, in the West of England the pollen of the Filberts is nearly always shed before the stigmas are receptive, whilst the ripening of the pollen of hedge Nuts coincides with the proper condition of the stigmas. *A. C. B.*

ABNORMAL MUSHROOM.

IN fig. 142 is reproduced an illustration of a remarkably abnormal Mushroom, sent us by Mr. W. Friend, West Heath House Gardens, Abbey Wood, Kent. The abnormality takes the form of a second Mushroom growing from the top of the first, and it is comparable with that sometimes exhibited by flowering plants, e.g., the "Hen and Chickens" Daisy. In the latter example of proliferation the growing point of the inflorescence is not used up, as it were, in the production of the head of flowers, but divides and grows again, producing a new stalk surmounted by flower-heads. Although a Mushroom does not possess a growing point in the technical meaning of the term, yet the apical tangle of hyphae behaves like a growing point, and, like that of the flowering plant above referred to, continues—after forming the "umbrella" of the Mushroom—to grow and divide, and hence gives rise to another Mushroom.

SOCIETIES.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

DECEMBER 13.—The monthly meeting of this society was held at the Royal Horticultural Hall on Monday, the 13th inst., Mr. Arthur Bedford in the chair. Two new members were elected. Three members were allowed to withdraw double the amount of interest due to them, amounting to £8 7s., and two members over the age of seventy years withdrew from their deposit account sums amounting to £24 0s. 10d. The sums of £52 4s. 6d. and £44 4s. 3d. respectively were passed for payment to the nominees of two deceased members. The sick pay for the month amounted to £53 10s. 4d. ordinary section, £47 14s. 4d. State section, and £21 maternity claims. The committee received with regret the resignation of Mr. G. W. Butcher from the committee owing to his having joined H.M. Forces.

ROYAL METEOROLOGICAL.

DECEMBER 15.—The usual monthly meeting of this society was held on Wednesday, the 15th inst., at 70, Victoria Street, Westminster, Major H. G. LYONS, D.Sc., F.R.S., president, in the chair.

Mr. F. J. BRODIE read a paper entitled "The Incidence of Bright Sunshine over the United Kingdom During the Thirty Years, 1881-1910." He described the steady increase in the use of sunshine recorders, from the somewhat crude type invented by Mr. J. F. Campbell in the early part of last century to the improved pattern of Sir George Stokes of 1879, which has remained in use with very slight modification to the present day. The paper is based on figures taken from Appendix IV. of the *Weekly Weather Report* for 1913, published by the Meteorological Office, and the maps which have been constructed differ somewhat in detail from those appearing in the official volume. The author dealt with the prevalence of sunshine both by the seasons in their usual grouping and annually. He also referred to the average number of sunny days at Greenwich and Falmouth and to the loss of sunshine recorded in London and other large manufacturing centres. He showed that the abatement of the smoke evil tended to an increased record of sunshine, and placed the large towns more on a footing of equality with the urban districts.

A paper was also read by Dr. W. GALLOWAY entitled "Remarkable Cloud Phenomena," in which the author described the curious and rapid changes which took place in a small portion of a thunder cloud, witnessed on July 31 last near Ormesby Broad, Norfolk. The phenomena pointed to the occurrence of electrical discharges, but neither rain, thunder, nor lightning occurred.

A third paper on "South African Coast Temperatures," was read by Dr. J. R. SURTON.

EDINBURGH MARKET GARDENERS'.

DECEMBER 14.—The annual business meeting of the Edinburgh Market Gardeners' Society was held on Tuesday, the 14th inst.

Mr. David King, Murrayfield, who presided, said that the prices of vegetables had been maintained to a greater extent than had been anticipated. This was mainly on account of the special demands made by the Fleet. In giving evidence before the Food Committee, he had stated that the market gardeners could not be expected to fight for their country and at the same time grow food. Yet he had before him a roll of honour of more than sixty names, which would require to be added to, as some had joined the Colours since it was compiled.

He had much pleasure in introducing Councillor Fisher, convenor of the Markets Committee, who, with Mr. Paton, City Chamberlain, was deputed to represent the Town Council of Edinburgh.

Councillor Fisher was cordially received, and congratulated the market gardeners on their success during the past year, and trusted that the cordial relations which existed between the market gardeners and the Town Council would continue. As convenor, he was ready to make representations to the Town Council at any time if such were necessary.

The deputation from the Town Council then withdrew, and the chairman asked Mr. James Blackie, Viewforth, Leith, to proceed with his motion No. 1, "That the market be opened at 7.30 a.m., instead of at 8 a.m., during the winter months." This was seconded by Mr. D. Lowe.



FIG. 142.—ABNORMAL GROWTH IN MUSHROOM.

Considerable discussion ensued on the motion. Mr. Macfarlane, East Linton, said the larger shopkeepers who attended the sales in Market Street preferred the 8 o'clock opening, as after the market they could go to the auction sale rooms, and sit quietly there making their purchases. On a vote being taken the motion was declared to be lost.

The second motion by Mr. Jas. Blackie, "That no goods be allowed to be removed from the market before the bell rings," also gave rise to considerable discussion, during which it was pointed out that the bye-laws passed by the Sheriff, if put in force, would remedy any grievances.

Mr. John Murie moved as an amendment that. "In fairness to everyone, the market should be open to all buyers at the same time, and allow all who cared to enter at the same time as the market gardeners. No bell to be rung at all." This was seconded by Mr. David Lowe, Kirkpark. Musselburgh, who was of the opinion that if carried the proposal would encourage buyers to come to the market in the early morning. The amendment was defeated. The chairman said it was unnecessary to press the motion, as the bye-laws afforded sufficient protection against any grievance that might be brought before them.

The reports of the secretary and treasurer were submitted, passed, and approved. These gentlemen were re-appointed.

On the motion of Mr. James W. Scarlett, Inveresk, it was agreed to record in the minutes the great loss the association had sustained by the death of the late Mr. James Taylor, who had been all his life connected with the market; also the deaths of Mr. Thos. Russell and Mr. James Gattens, both of Bazaar, Glasgow, two prominent members of the trade.

DEBATING SOCIETIES.

BATH GARDENERS'.—The chairman, Mr. T. Parrott, presided at the annual meeting of the Bath and District Gardeners' Debating Society (held on Monday, the 13th inst.) The committee's annual report, read by the hon. secretary, Mr. H. Sparey, stated that the Society still maintained a high standard of efficiency. The season just ended was one of the best since its formation, although they had not enrolled quite so many members as last year. The exhibits surpassed the record of previous years, both in number and quality, and 600 points had been awarded. Mr. H. Raper won the Society's Silver Medal with 104 points, and Mr. T. Allen had gained the Bronze Medal with 78 points. These gentlemen were the winners last year. During the year three honorary members and 13 ordinary members had been elected. The treasurer's report stated that the total income was £40 11s. 8d., and the expenditure was £44 15s. 8d. There is a bank balance of £28 1s. 11d. The chairman regretted that the Chrysanthemum Show had not been held this year, but felt that its abandonment was justified. The secretary's financial statement showed a balance in hand of £1 19s. 7½d. The report and accounts were adopted. The president (Captain C. T. Foxcroft), vice-presidents, officers, and committee were all re-elected.

READING AND DISTRICT GARDENERS'.—The usual fortnightly meeting of this association was held on Monday, the 13th inst., in the Abbey Hall. Mr. E. Blackwell, the vice-chairman, presided. The subject for discussion was "Greenhouse Flowering Plants from Seeds," and was introduced by Mr. F. Townsend, The Gardens, Hillside, Reading, who treated very fully with Calceolarias, Gloxinias, Streptocarpus, and Begonias. A series of colour photographic slides illustrated the lecturer's remarks. The exhibits were not quite so numerous as at the last two meetings, but the quality was very good. In the "Points" competition, Mr. C. Cripps, The Gardens, Tidmouth Grange, received 11½ points for winter-flowering Carnations, a vase of Mary Allwood variety being exceptionally good; Mr. A. H. Fulker, The Gardens, Elmhurst, was awarded 10½ points for Apples; Mr. E. Blackwell, The Gardens, Foxhill, 10 points for Orchids (Calanthes); Mr. H. Reeves, The Gardens, Blandford Lodge, 10 points for Apples. Mr. F. Townsend was awarded the Society's Certificate of Cultural Merit for Cox's Orange Pippin Apple.

Obituary.

HON. JOHN BOSCAWEN.—It is with deep regret that we record the death on Sunday morning, the 12th, of the Hon. John Boscawen. He had attended the little church at Devonon, and, stooping to start the engine of his motor-car, felt dizzy. He expressed a wish to sit down a few minutes to recover, but died almost immediately. There were few men better known for all the good qualities which go to make up the ideal country squire. Possessed of a splendid physique, he was a great, good-natured, genial man, a lover of all things beautiful and an enthusiastic agriculturist. He was chairman of the Cornwall County Council Dairy Committee, a county alderman, a deputy lieutenant, chairman of the sanitary committee, and a member of the Narcissus and Tulip Committee of the R.H.S. By horticulturists he will be best remembered as a great amateur gardener and a lover of flowers. He was secretary of the Cornwall Daffodil and Spring Flower Society from its foundation, and the success of the annual shows of the society was largely attributable to his interest and energy. Mr. Boscawen laboured long and assiduously to raise the status of agriculture and horticulture. We tender our sympathy to Lady Margaret Boscawen, and to her only daughter, Lady Petrie, who herself has suffered a grievous loss in the death of her husband, Lord Petrie, at the front, only a few weeks ago.

GARDENING APPOINTMENTS.

Mr. John F. Stephenson, for the past 6 years Gardener to Mrs. BEN SMITH, Temple Bank, Bradford, as Gardener to Lieut. A. HOLDEN, Illingworth, R.N.V.R., Doveton House, Windermere. [Thanks for Ls. for R.G.O.F. box.—Eos.]

Mr. John Anderson, previously Gardener to Col. KENNIS, Ballinacor, co. Wicklow, as Gardener to WM. BLACK, Esq., Chapel, Kingskettle, Fife.

MARKETS.

COVENT GARDEN, December 22.

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

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Azalea, white, per doz. bun.	6 0-7 0	Lilium, lancifolium, long	2 0-2 6
Camellias, white, per doz.	2 6 —	— short	2 6-3 0
Carnations, per doz. blooms, best American varieties	3 0-4 6	— long	2 0-2 6
— smaller, per doz. bunches	— —	— short	1 6 —
— Carolina (crimson), extra large	5 0-6 0	Lily-of-the-Valley, per dozen bunches	— —
— Malmaison, per dozen blooms	— —	— extra special	3 4 0-36 0
— oink	10 0-15 0	— special	24 0 —
Chrysanthemums, white, per doz. blooms	2 6-3 6	— ordinary	— —
— Red, per doz. bunches	10 0-15 0	Mistletoe, per crate	40 0-45 0
— Yellow, per doz. blooms	2 0-3 6	Orchids, per doz.	— —
— Bronze, per doz. blooms	1 6-3 6	— Cattleya	12 0-15 0
— Pink, per doz. blooms	1 6-3 6	— Cypripedium	2 0-3 6
— White, per doz. bunches	10 0-15 0	— Odontoglossum crissum	4 0-5 0
— Bronze, per doz. bunches	9 0-12 0	Pelargonium, per doz. bunches	10 0-12 0
— Pink, per doz. bunches	10 0-12 0	— double scarlet	10 0-12 0
— Yellow, per doz. bunches	9 0-15 0	Richardias (Arums), per doz.	6 0-8 0
— single, dis-budded blooms, per doz.	1 0-2 0	Roses, per dozen	1 6-3 6
— bunches, per doz.	9 0-12 0	— Duchess of Wellington	2 0-2 6
Daffodils, per doz. blooms	2 0-2 6	— Lady Hillingdon	2 0-2 6
Eucharis, per doz.	2 6-3 0	— Liberty	4 0-9 0
Gardenias, per box of 15 and 18 blooms	6 0-8 0	— Madame A. Chateau	4 0-6 0
Holly, per doz. bundles	18 0-24 0	— Melody	— —
Hyacinth, Roman, per doz. spikes	1 6-1 8	— Mrs. Russell	— —
Lapageria, per doz. blooms	— —	— My Maryland	— —
Lilac, white, per doz. sprays	4 0-4 6	— Niphetos	3 0-3 6
Lilium longiflorum, per doz. long	4 0-4 6	— Prince de Bulgarie	— —
— short	4 0-4 6	— Richmond	3 6-5 0
		— Sunburst	— —
		— White Crawford	3 0-4 0
		Spiraea, white, per doz. bun.	— —
		Stock, double white, per doz. bunches	— —
		Tuberose, per packet, 24 blooms	1 6 —
		— double, Marie Louise, per doz. bun.	4 0-6 0
		— Princess of Wales, per doz. bun.	4 0-5 0
		White Heather, per doz. bun.	1 0 —

French Flowers.

	s.d.s.d.		s.d.s.d.
Marguerites, yellow, per doz. bunches	2 0-2 6	Safrano Roses, per packet, 24's	2 0-2 6
Minosa (Acacia), per doz. bun.	10 0-12 0	Violets, Parma, large bun, each	4 0-5 0
Narcissus, paper white, per doz.	12 0-15 0	— single, per pad, 48-60's.	8 0-10 0
Ranunculus, red, per doz. bun.	12 0-15 0	— per doz.	2 6 —

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Adiantum (Maidenhair Fern), best, per doz. bunches	7 0-8 0	Fern, French, per doz. bunches	0 6-0 8
Agrostis (Fairy Grass), per doz. bunches	2 0-4 0	— common	4 0-5 0
Asparagus plumosus, long trails, per half dozen	1 6-2 0	Galax leaves, green, per doz. bunches	— —
— medium	12 0-18 0	Hardy foliage, various, per doz. bun.	4 0-8 0
— Srengeri	6 0-12 0	Honesty, per doz. bunches	10 0-12 0
Berberis, per doz. bun.	4 0-5 0	Lichen Moss, per doz. boxes	15 0-18 0
Carnation foliage, doz. bunches	4 0-5 0	Moss, gross bunches	5 0-6 0
Croton foliage, doz. bunches	12 0-15 0	Myrtle, doz. bun. English	6 0 —
Cycas leaves, per doz.	5 0-12 0	— French, per doz. bunches	1 0-1 3
Eulalia japonica, per bunch	— —	Pernetia, per doz. bunches	6 0-8 0
		Smilax, per bun. of 6 trails	1 6-1 9

REMARKS.—There is every prospect of a good demand for cut flowers this week, especially for white and scar-

let blooms; there are signs of a shortage of some subjects. Richardias, Arums, and Roses promise to realise very high prices. There is a shortage of Carnations. Single Daffodils are the latest addition in this department. There is no alteration in the prices of pot plants from those of last week. All foliage and flowering plants are in good demand. Tulips and Hyacinths on bulbs are selling well; these are put up in small boxes, 24 and 30 bulbs in a box. Scarlet Tulips are plentiful.

Fruit: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Apples—		Dates, per doz. boxes	6 6-7 0
— Albemarle, per barrel	28 0-30 0	Grape Fruit, per case	16 0-18 0
— Californian, per box	7 0-8 0	Grapes: English, black, per lb.	0 8-2 0
— English cooking, per bus.	4 0-7 0	— Almeria, per brl. of 60 lbs.	18 0-25 0
— Dessert, per bus.	3 0-6 0	— Canon Hall, per lb.	2 0-4 0
— Nova Scotian, per barrel	14 0-23 0	— Muscat, per lb.	1 6-4 0
— Oregans, per case	8 0-12 0	Lemons, per case	10 0-27 0
— Wenatchee, per case	11 0-13 0	Lyches, per box	1 4-1 6
Apricots, Cape, —	— —	Melons, each	1 0-2 6
Bananas, bunch—		Nuts, Brazils, new, per cwt.	72 0-80 0
— Medium	7 6-10 0	— Coconut, per 100	21 0-24 0
— X-medium	9 0-12 0	— Messina cobs, per bag	40 0-44 0
— Extra	11 6-14 0	Oranges, per case	16 6-40 0
— Double X	12 6-16 0	— Californian Seedless, per case	20 0-22 0
— Giant	15 0-18 0	— Peaches, Cape	— —
— Red, per ton	£20 0 —	Pears, per case	16 0-22 0
Jamaica, per ton	£14 0 —	— stewing, per bus.	5 0-7 0
Chestnuts—		Walnuts, French, per bag	10 0-12 0
— Italian, per bag	18 0-21 0		
— Spanish, per bag	17 0-20 0		
Cobnuts, per lb.	0 6 —		
Crabapples, per case	12 0-18 0		

Vegetables: Average Wholesale Prices.

	s.d.s.d.		s.d.s.d.
Artichokes, Globe, per doz.	2 6 —	Mushrooms, s.culti-vated, per lb.	1 0-1 3
— Jerusalem, per bushel	1 6 —	— Buttons	1 0-1 3
Asparagus, Paris green	3 6-4 0	Mustard and Cress, per doz. punnets	0 10-1 0
Aubergines, per doz.	— —	Onions, English, per bus.	7 0-8 0
Beetroot, per bus.	2 6 —	— Valencia, per case	13 6-15 0
Beans, Madeira, per bus.	— —	Parsnips, per bus.	2 0 —
Brussels Sprouts, per bus.	2 0-2 6	Potatoes, new (Channel Islands), per lb.	0 10-1 0
Cabbage, per tally	3 0-4 0	Radishes, per doz. bun.	1 0-1 6
Carrots, per doz.	2 6-3 6	Rhubarb, forced Savoy, per tally	4 0-5 0
Cauliflowers, per tally	3 0-4 0	Seakale, per doz. punnets	15 0-18 0
Celeriac, per doz.	2 6-3 0	Shallots, per sieve	2 6-5 0
Celery, per fan	1 0-1 6	Spinach, per bus.	2 6 —
Chicory, per lb.	— —	Tomatoes, English, per doz. bundle	10 0-14 0
Cucumbers, per doz.	8 0-12 0	— Tenerife, per bundle	10 0-14 0
French Beans, per lb.	2 6-3 0	Turnips, per cwt.	3 0-3 6
Garlic, per lb.	0 10-1 0	Turnip Tons, per bus.	2 0 —
Greens, per bag	1 0 2 0	Watercress, per doz.	0 6 —
Herbs, per doz.	2 0-6 0		
Horseradish, per bundle	2 0-2 6		
Leeks, per doz.	1 0 1 6		
Lettuce, Cabbage and Cos, per doz.	— —		
— Watercress, per doz.	0 10 —		

REMARKS.—Large shipments of Canadian, Nova Scotian, and United States Apples are arriving, packed in barrels and boxes. Of English sorts, Cox's Orange Pippin, Bramley's Seedling, and Dumelow's Seedling are available. Pears consist chiefly of Doyenné du Comice, Winter Nellis, Beurré Diel, and Catillac. The first arrival of Peaches and Apricots from the Cape is expected next week, and Madeira Beans will probably also arrive. Forced Rhubarb is now to be had. The supplies of Muscat Grapes are almost exhausted, but Black Grapes are sufficient for the demand. Nuts continue to be plentiful; Dates are scarce, and the supply of Beans and Peas is limited. Mistletoe is scarce and dear, but Holly is plentiful. Pineapples are available in good quantities. The supplies of Seakale and Mushrooms have increased. English Tomatoes are practically over, but there are good supplies of imported ones from Tenerife. Cucumbers are scarce, Californian seedless Oranges are now available. The supply of green vegetables is well maintained. E. H. R., Covent Garden Market, December 21, 1915.

Potatoes.

	s.d.s.d.		s.d.s.d.
Bedford—		Lincoln—	
— King Edward	4 6-5 0	— Eclipse	4 8-5 3
— Blackland	4 3-4 6	— Evergood	4 6-4 9
— Dunbar	6 6-6 9	— King Edward	4 8-5 6
— Kent	— —	— Queen	5 0-5 3
— Eclipse	4 6-5 3	— Scotch—	
— King Edward	5 0-5 3	— King Edward	4 8-5 3
— Queen	4 9-5 3		

REMARKS.—Trade is still good, and no alteration in prices is reported. Arrivals are slow, consequently the stock in London is not very big. Edward J. Newborn, Covent Garden and St. Pancras, December 21, 1915.

ANSWERS TO CORRESPONDENTS.

There are few gardeners, and still fewer amateurs, who do not on occasion require immediate information upon various points of practice. But either from an unwillingness to inquire, or from not knowing of whom to make the inquiry, they too often fail to obtain the information they are in want of. And let no one be alarmed lest his questions should appear trifling, or those of a person ignorant of that which he ought to know. He is the wisest man who is conscious of his ignorance; for how little do the wisest really know!—except that they know little. If one man is unacquainted with a fact, however common, it is probable that hundreds of others in the same position as himself are equally in want of similar information. To ask a question, then, is to consult the good of others as well as of one's self.—*Gardeners' Chronicle*, No. 1, Vol. I., January 2, 1841.

ADDRESSES: A. F. United Horticultural Benefit and Provident Society, secretary, Mr. A. C. Hill, 35, Alexandra Road, West Kensington; Gardeners' Royal Benevolent Institution, secretary, Mr. George J. Ingram, 92, Victoria Street, London.

BANANA UNHEALTHY: H. T. No fungous or insect disease is present. The injury is caused by the deposition of moisture on the leaves, and too marked extremes of temperature.

BOOK: C. W. The best descriptions of flowering shrubs generally, including the various members of the Prunus family, are to be found in *Trees and Shrubs Hardy in the British Isles*, by W. J. Bean, Assistant Curator of the Royal Botanic Gardens, Kew. Numerous illustrations are given, but the various families enumerated in your list are not fully illustrated; neither do we know of any work giving illustrations of all the species of those genera. The book may be obtained from our publishing department, price £2 2s. 8d., free by post.

NAMES OF FRUIT: F. W. F. 1, Claygate Pearmain; 2, Gros Fenoillet; 3, Bramley's Seedling; 4, King of Tompkins County; 5, Pear Beurré Diel.—T. P. H. Golden Harvey syn. Brandy Apple.—R. F., 1, Aston Town; 2, March Bergamot; 3, Soldat Laboureur.—I. L., Notts. 1, Minchull Crab; 2, Mannington's Pearmain; 3, Green-up's Pippin; 4, Forge; 5, Mabbott's Pearmain.—Clark, 1, Minchull Crab; 2, Roi d'Angleterre; 3, Calville St. Sauveur.—J. D., 1, Court Pendu Plat; 2, Orange Goff; 3, Blenheim Pippin; 4, Beurré Alexandre Lucas; 5, Passe Colmar; 6, Uvedale's St. Germain.—C. Best. 1, Jolly Beggar; 2, New Bess Pool; 3, Nancy Jackson; 4, Annie Elizabeth; 5, Bergamotte Espéren.—T. C. T. 1, Chaumontel; 2, Beurré Buisson; 3, Beurré Rance; 4, Scarlet Nonpareil; 5, not recognised (probably a local variety).

NAMES OF PLANTS: T. B. R. Arbutus Uredo.

PEARS ROTTEN: A. G. We cannot detect any disease in the Pears; they are merely rotten in the skin and core, as is not uncommon with this variety. We found the flavour very good where the flesh was still firm.

PERENNIALS FOR A COLOUR SCHEME: C. W. T.

The following perennial plants flower from May to autumn, and would provide a display more or less constantly during that period:—*Grey*.—*Erigeron Quakeress*, 2 feet, blue-grey; *Scabiosa caucasica*, 2½ feet, lavender; *Nepeta Mussinii*, 1 foot, grey foliage blue flowers. *Dark blue*.—*Delphinium lamartine*, dark blue, 3 feet (perpetual); *D. Mr. J. S. Brunton*, sky-blue (perpetual), 3 feet; *D. Mrs. Thompson*, gentian blue, 3 feet; *Anchusa Dropmore* variety, 4 feet; *A. Opal*, pale blue, 4 feet; *Salvia virgata nemerosa*, 2 feet. *Golden*.—*Coreopsis grandiflora*, 2½ feet; *C. lanceolata*, 2½ feet; *Helenium pumilum magnificum*, 2½ feet. *Orange*.—*Gaillardia Orange Queen*, 2½ feet; *Rudbeckia Neumannii*, 2 feet (July); *Verbascum densiflorum*, 4 feet. *Green*.—*Rosemary*, lavender, and *Veronica cypripedoides*, 1 foot. Other subjects, such as *Pentstemon* and *Gladiolus*, may also be used.

Communications Received.—W. Clark—W. K.—N. R. S.—J. G. W.—E. H.—F. J.—K. E. S.—T. W. B.—F. W. C.—J. F. R.—J. F.—J. E.—H. C.—E. R. J.—M. B.—G. B. & Co.—L. G. P.—B. G. A.

